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LIGHT RAILWAYS

Australia's Magazine of Industrial & Narrow Gauge Railways

Light Railway Research Society of Australia Inc.

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Imperial to metric conversions:

1 inch (in)	25.40 millimetres
1 foot (ft)	0.30 metre
1 yard (yd)	0.91 metre
1 chain	20.11 metres
1 mile	1.60 kilometres
1 ton	1.01 tonnes
1 pound (lb)	0.454 kilogram
1 acre	0.4 hectare
1 horsepower (hp)	746 Watts
1 gallon	4.536 litres
1 cubic yard	0.765 cubic metres
1 super foot (sawn timber)	0.00236 cubic metre

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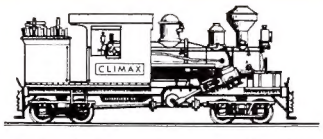
Editorial

Light railways are, by their very nature, ephemeral. They are created to do a specific job, and either pulled up or abandoned when their useful lives are over. They create remains which are also ephemeral. Mines are closed, construction projects are completed, forests regenerate, patterns of agriculture change, or suburbia washes over the site. Since the documentary evidence for such lines is often sparse, those traces that still remain can be particularly valuable. Yet year by year those traces continue to diminish as human activity and natural forces work their processes of obliteration. A record made now may prove important. You may have little interest in writing about such a line, but your observations, recorded in *Light Railways*, may help someone to do so in the future. All that is needed is a pair of good boots, a ruler, a notebook, a camera and perhaps a GPS unit (included in most mobile telephones these days). The benefits are exercise, the acquisition of mapping skills, developing a keen eye for the landscape, and the knowledge that you are making a contribution. It can also be a very companionable exercise to undertake with like-minded friends. If you would like to try your hand but don't know how to start, advice is always available from fieldreports@lrrsa.org.au.

Peter Evans

Front Cover: *One of the Ruston 30DL locomotives struggles upgrade to the refinery at Laverton with a rake of loaded wooden-bodied salt-hoppers in August 1976. It is entering the siding to the wagon tippler with sanders still dumping sand on the track. Note the rail-washing tanks on the front buffer beam and associated pipework. Photo: Geoff Cargeeg collection ref 7608A-03 courtesy GSWRHS*



Light Railway Research Society of Australia Inc. A14384U
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The Light Railway Research Society of Australia Inc. was formed in 1961 and caters for those interested in all facets of industrial, private, tourist and narrow gauge railways in this country and its offshore territories, past and present.

Members are actively involved in researching light railways in libraries and archives, interviewing knowledgeable first-hand participants and undertaking field work at industrial sites and in forests.

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The Cheetham Chronicles: Part 6
The Moolap and Laverton Works

by Peter Evans

Introduction

Salt, or Sodium Chloride (NaCl) occurs in three forms – large natural rock deposits as in Europe, Asia and North America; surface and sub-surface deposits of brine, as in China, and in a universal source: seawater. The production of salt is one of the earliest human industrial activities. Salt is critical for human existence - wars have been fought over it and, in some parts of the world, it was used as a form of currency. It has given us words as diverse as *salary*, *soldier* and *salacious*, as well as phrases such as describing a person being 'worth their salt'.[1]

The production of salt from seawater by solar evaporation was known to the early Chinese, the Phoenicians and the ancient Egyptians. Australian Aboriginal people used salt collected from the leaves of mangroves, from inland dry salt lakes and, no doubt, that found in dried pools on the coast. On arrival in Australia, Europeans required a source of salt too, preferably close to the coast where the archipelago of early settlements was established. Since there were few dry salt lakes in these regions, salt-making largely relied on either solar evaporation of seawater or boiling seawater in shallow iron pans. Obviously, the latter required vast amounts of fuel. While sunlight was slower, it was also free. Government boiling works were in use in Newcastle by 1804, and John Blaxland established a solar saltworks at Newington by 1807.[2]

Naturally occurring salt deposits were easier to harvest. In 1859, Roderick McGregor had a licence for procuring salt at Long Lake Run near Swan Hill in Victoria. His licence included an acre of ground on the lake bank plus the use of the waters of the lake, which was dry most of the year. Salt was produced for £5 per ton plus thirty shillings for storing and sifting, making a total of about £7 per ton. Delivery to Albury and Wagga Wagga (presumably by river steamer) doubled that price.[3] Another early Victorian producer was Macdonald's 1861 Victoria Saltworks at Lake Bolac using the boiling process on naturally saline waters. He was defeated by freshwater springs in the lake bed continually diluting the brine and, by 1862, had applied to transfer his operations to another lake four miles away. He died shortly afterwards, and the works were taken over by his widow Charlotte.[4]

Henry Berry was another pioneer in the Victorian salt trade (both as an importer and a manufacturer) and, from 1868, established a salt manufactory at Lake Cundare. Despite the fine quality of Berry's pan-boiled salt (and the expenditure of some £10,000) the business was forced to close in the early 1890s due to the deep financial depression exacerbated by high transport costs and want of sufficient tariff protection.[5] But there were many others commanding less capital willing to try. By the beginning of the twentieth century a diligent worker could shovel up around ten tons of salt per day, each ton being valued at between twelve and fifteen shillings. The technology used was simple and within reach of almost everyone. The salt was simply shovelled into heaps, placed in wooden boxes, and hauled to the lake shore with a horse. Often, it could be bagged and sold straight to customers.[6] This simple process supplied seasonal work and income to locals who mostly sold locally and thus did not incur excessive transport costs. However, solar evaporation remained the pre-eminent method of Australian salt production for most of the nineteenth and twentieth centuries. In Victoria, none did it better than Richard Cheetham.

Salt merchant and manufacturer Henry Berry in 1896. Vandyck & Co, State Library of Victoria image H91.270/58

Richard Cheetham

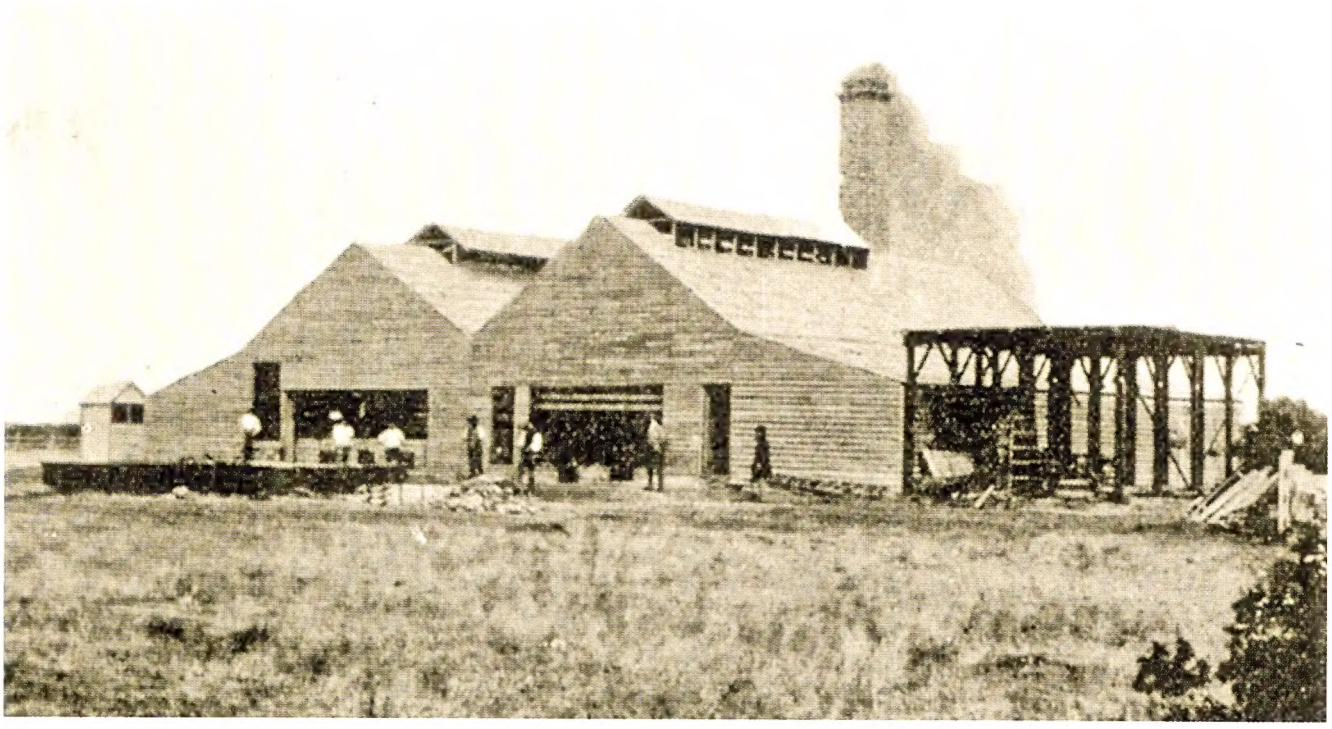
Richard Cheetham was born in Manchester in 1835, the son of Samuel Cheetham and Catherine Cheetham, neé Cocker. He married Mary Mills of Manchester in 1855, and emigrated to Australia, arriving in Victoria on the *Theophane* in December 1868.[7] Cheetham was a manufacturing chemist with experience in the salt industry in southern Europe, and quickly saw the potential for salt production on the Victorian coastline. His first attempt was in 1869 at French Island in Westernport Bay in partnership with Alfred Felton, Frederick Grimwade, Alfred Shaw, Robert Harvey and Henry Hughes. The enterprise traded as The Australian Salt Manufacturing Company, but the partnership was short-lived and was dissolved in March 1886.[8] It is believed the venture failed because of excessive summer rainfall. In 1888 Richard Cheetham tried again. This time he chose a location on the shores of Stingaree Bay, east of Geelong and in the parish of Moolap on 630 acres of land obtained from the Victorian Government on a 21-year lease.

The first task was to throw a mile-long coffer dam across Stingaree Bay and construct pans in which to concentrate and crystallise the salt. This involved workmen struggling against the wind and tide, sometimes starting at 4.00am waist-deep in water in the middle of winter to take advantage of the lowest tides. One of the requirements was to move the various salt solutions between the pans with minimal use of pumps, so

levels had to be very carefully-controlled. Without surveying instruments, this was done by digging ditches and filling them with water to get a level. By this means, accuracies could be achieved such that a sluice could be built with a fall of one inch in half a mile. This allowed the outer pans to fill automatically on the incoming tide, the sluice-gates closing as the tide receded and trapping the water in the pans.[9] Thereafter a portable steam engine was employed to drive a pump to transfer the water to the highest level of the works, gravity performing the rest of the task as the concentration of the salt solution gradually increased under the summer sun. After the gypsum had precipitated out, the concentrated brine was pumped into the crystallisers to dry, from where the salt was shovelled into wheelbarrows and barrowed to the bank, re-dissolved in a little sea water, and purified further by boiling. The boiling process required two-thirds of a ton of coal to produce a ton of salt, but further experimentation with careful control of the brines and improving the lifting process allowed boiling to be abandoned.[10]

In April 1891, after three years hard work and the expenditure of £15,000, Richard Cheetham was confident enough of success to approach the Geelong Council and the Victorian Government to have the lease extended to 99 years and to purchase part of the land as freehold. A small refinery was erected on the Point Henry Road, and about 1000 tons of salt harvested and put through the refinery. Only part of this could be refined as supplies of fresh water were insufficient to treat all of the salt. Refined salt was then worth £5 per ton (and could compete with the popular imported 'Black Horse' salt); salt in its raw state was worth considerably less, and difficult to sell. Security of tenure and a better supply of water were going to be essential for the success of the new industry.[11] In March 1893, a Ministerial party visited the works and were impressed by what they saw. The harvest was in full swing, and 2500 tons of salt were stacked on the banks of the crystallisers with another 1000 tons still to be collected.[12] The biggest problem was the current short tenure of the lease from the Crown – while a short-term lease existed, the banks were unwilling to lend the money required to fully develop the venture.[13] Although the government wanted to encourage native industry (especially during a period of high-unemployment), it was nervous about selling what it saw as prime real-estate close to the centre of Geelong.[14] That the land in question had been mostly a stinking mud-flat submerged at high tide seemed not to matter at all – it was 'foreshore land', and Victoria was stricken with a serious economic depression in which gambling in land had been a central cause.

Victorian solar salt pioneer Richard Cheetham.
Cyclopedia of Victoria *(1903). Volume 2, page 441.*



The first salt refinery on the Point Henry Road in 1893.
Illustrated Australian News, *1 May 1893, page 13, State library of Victoria image IAN01/05/93/13d*

Shovelling the crust of salt off the floor of the crystallisers at Moolap. *Unknown photographer, State Library of Victoria image rwls/u126*

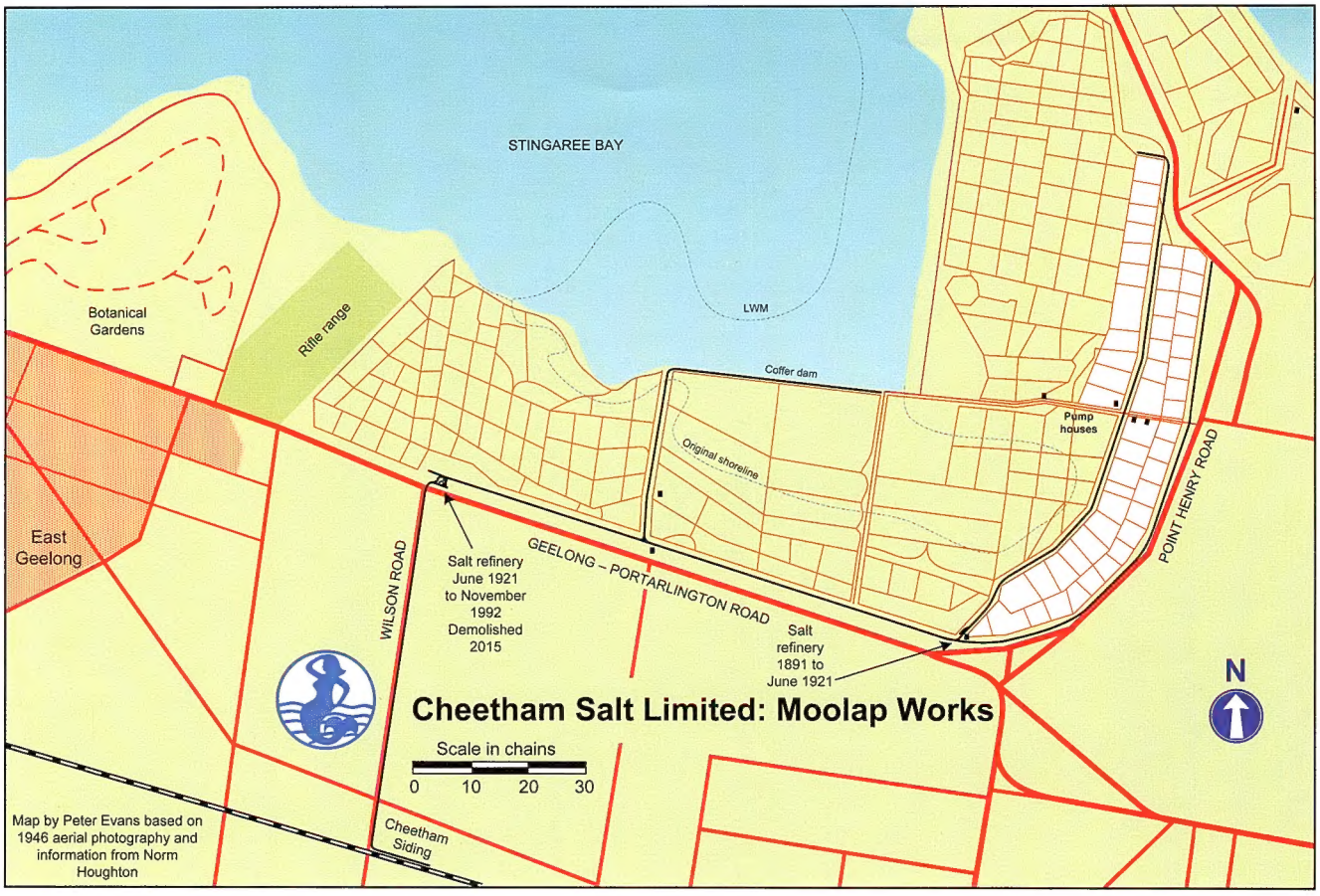
While the question of tenure was still being settled, finance was provided by Alexander William Cunningham, manager of the National Bank in Geelong. After much debate in the Victorian Parliament, Richard Cheetham was successful in having his wishes granted in the form of the *Moolap Salt Works Act* of 1896. The lease extended control of the existing 630 acres for 21 years from 1888, to 670 acres for a term to end on 1 September 1970. The rent was doubled to £32 per annum, and the use of the land was restricted to salt production. The land could not be subdivided or let. Within five years, improvements to the value of £7500 had to be put in place, with an identical amount to be spent in a further five years. All improvements were to be maintained and the sea wall was to be extended and pedestrian access permitted. The Crown was entitled to resume the land on twelve months' notice with payment for improvements and, at the end of the lease, all improvements reverted to the Crown.[15]

When Alexander Cunningham had invested in the venture it was simply trading as 'Richard Cheetham & Company'. In September 1894, this was formalised as 'Richard Cheetham & Company Limited' with a capital of £30,000 in 60 shares of £500, and an office at 71 Little Malop Street, Geelong. Richard Cheetham was to be managing director with an annual salary of £500.[16] He did not have long to enjoy the fruits of his labour. Richard Cheetham died of heart disease at the Ballarat Railway Station on 14 July 1900 and was buried at the Eastern Cemetery, Geelong. His three children had already pre-deceased him.[17] His wife Mary returned to England where she died in 1915 aged 77 years.[18]

However, the Company founded by Richard Cheetham was in secure hands with the Cunningham family. The Cunningham family managed their interest through A W Cunningham's son, Andrew Hassal Cunningham and, later, A H Cunningham's brother, Alexander Jackson 'Jack' Cunningham, an engineer. On 6 January 1904 the Company name was changed to 'The Cheetham Salt Pty Ltd' and, in 1904, the capital was increased to £50,000 by the issuing of a further 40 shares of £500. Regular increases in capital followed thereafter as the Company grew and prospered.[19] Jack Cunningham made constant improvements, mostly related to mechanising the harvesting and refining processes. Much of the specialised equipment required was constructed in the Company's own workshops. In 1909 the Company received permission to construct a 2 ft gauge horse-drawn tramway between its refinery and a siding on the Geelong-Queenscliff line in order to send its salt away by rail.[20] Transport was a key element in salt production and an important part of keeping costs to a minimum. Following the 1914-18 war a new, more efficient refinery was erected further west, which was to be powered by electricity. The old Point Henry Road refinery was shut down on 5 July 1921 and converted into a salt store.[21]

Expansion interstate

Historically, Cheetham Salt's largest competitors were located in South Australia, where salt harvested from naturally-occurring dry lakes and by solar evaporation provided 80% of Australia's salt production until 1966. The South Australian salt industry started at Kangaroo Island in 1814 and moved rapidly to the Lower Yorke Peninsula, with the first solar ponds constructed in 1915. The largest operator was the Australian Salt Company.[22] In 1922, Cheetham Salt acquired leases totalling 3652 acres at Price, situated at the head of St Vincents Gulf in South Australia. Road and rail links provided a ready means of export. In 1928, Cheetham acquired a controlling interest in the Australian Salt Company and additional leases were obtained at Lochiel on Lake Bumbunga north of Adelaide, close to a railhead, and providing a ready source of unrefined salt. In 1957, Cheetham Salt acquired a controlling interest in Central Queensland Salt Industries Limited, with works situated at Bajool, Bowen and Guthalungra.



Cheetham Salt Consolidated Limited was formed in August 1961 to act as a holding company for this diverse range of ventures. The new company had a capital of £1,250,000 in shares of £1, and Jack Cunningham was appointed managing director. In 1962, Cheetham Salt engaged in a joint venture with Cerebos (Australia) Limited to take advantage of the latter's marketing experience. The joint venture traded as Saltpak Pty Ltd. To further cement Cheetham Salt's grip on the industry, a salt refinery was built at Port Botany in NSW in 1966 to operate on bulk salt shipped from interstate.[23]

Expansion in Victoria

Meanwhile, back in Victoria, by 1924 production at Moolap had fallen below market requirements because of unseasonal rainfall. Driven by the ready acceptance of locally produced salt, a new solar evaporation site of 1,950 acres was purchased at Laverton. The first harvest at this site was undertaken in 1926. Initially, only unrefined salt was produced at Laverton, but a growing demand from burgeoning industry in Melbourne's suburbs led to the installation of a refinery in 1943 to produce higher-quality salt. From 1935, Cheetham also began to buy-up some of the small operators harvesting from Victoria's salt lakes, and kept a close eye on the rest. More unseasonal rains in 1950-51 led to the addition of a third Victorian solar harvesting site of 2,200 acres at Lara on the property 'Avalon' (formerly owned by the Austin family), and this went into production in 1953. However, a processing works was never built at Avalon as salt from this source was mainly sold in crude form to the petro-chemical industry.[24] For the first time in the Company's history, no tramways were used at the new site.

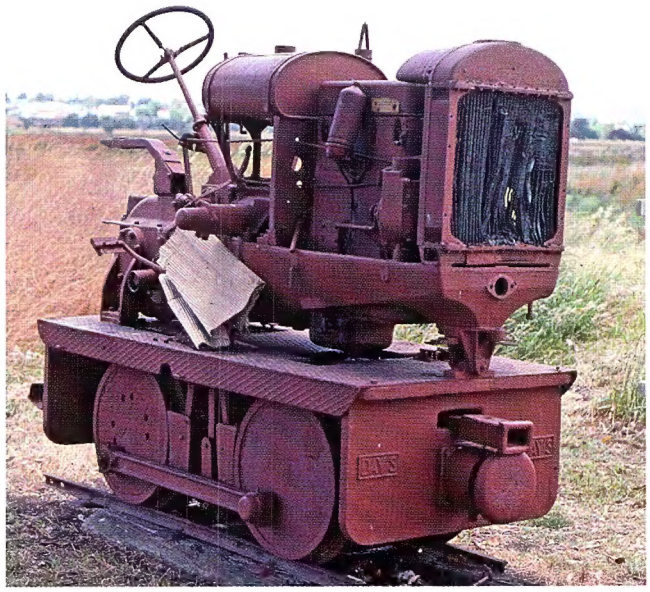
Tramway systems

Initially, horse-drawn drays were used to transport salt to the first Moolap refinery, but these were quickly replaced by tramways, which were used from the inception at Laverton. A 610mm gauge track was laid from the refinery from which branches were constructed so that there was access to every crystallising pan on at least one side. These tramways were horse-worked and well-constructed on substantial wooden sleepers and, by closure, laid in steel rail ranging from 20lb to 40lb per yard. At the farthest reaches of the crystallising pans at Laverton, the central tramway spine was double-tracked, allowing ample opportunity for trains to pass. At each refinery, tramways served the wagon tippler, the bulk salt dump, and the maintenance workshops.[25] In 1923 work began at Moolap on designing an underframe to convert a Fordson tractor into a locomotive.[26] It is not known if this scheme bore fruit, but Cheetham eventually used Fordson-powered TACL tractors at Price in South Australia so, if built, the Moolap locomotive would represent an early experiment. What is certain is that, in the late 1930s, Cheetham purchased at least three rail tractors built by W Day & Sons of 100 Whiteman Street, South Melbourne, and these may have been the first locomotives used on any of the salt tramway systems. The last of these locomotives was ordered on 5 May 1941 and was in use at Moolap by 30 September of that year.[27] In July 1945 an enquiry was made as to the suitability of Ruston locomotives,[28] with the first of a fleet of four purchased in 1947.

At the outer end of the main tramway system at Laverton, a lengthy section of line was used to obtain sand from close to the shores of Port Phillip Bay to reline the floors of the crystallising pans after each harvest. It was laid in very light rail of between 16lb and 20lb to the yard. From the end of the line serving the crystallising pans, the sand tramway left the main works on a small trestle bridge over Skeleton Waterholes Creek. After crossing the Creek, it then followed the southern side of a road as far as the No.1 pump. It skirted the pump on its northern side and then crossed the channel to the tidal lagoon at an oblique angle and followed close to the north

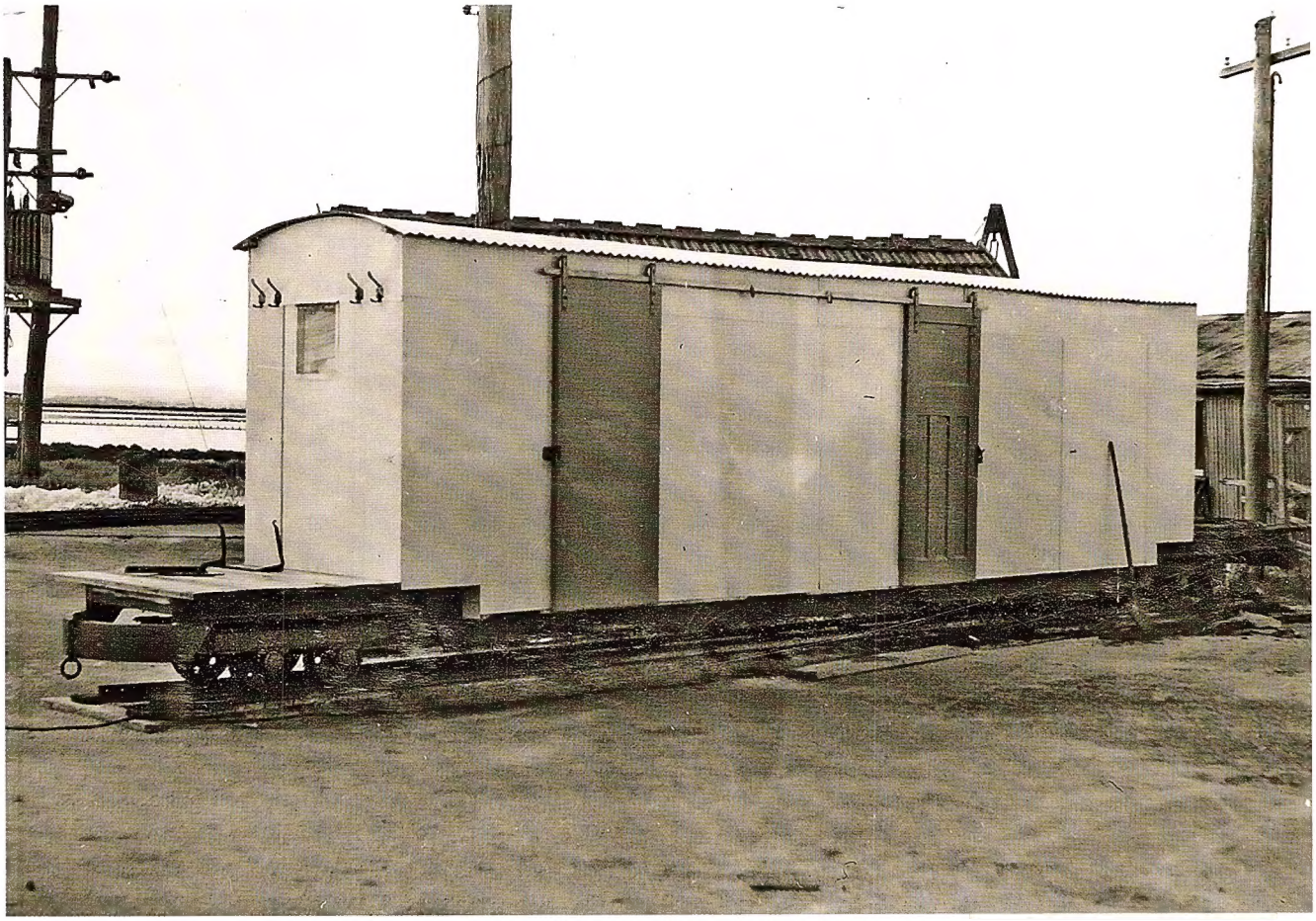
bank of Skeleton Waterholes Creek until about 300m from Port Phillip Bay. The tramway then turned roughly parallel to the shore of Port Phillip Bay for 500m. There appear to have been at least three working termini during the life of the line. Of the first and western-most of these, little remains apart from a low embankment. The next terminus north is more substantial in nature, with a well-defined embankment ending in a heap of sand. The final working terminus is the most northerly of the three. Where this line junctioned from the second terminus, the rails have simply been slewed east off the embankment and laid almost flat on the ground. When the tracklayers ran out of material from the line to the second terminus, the remainder of the line appears to have been laid in pre-fabricated track panels north across the beach road where the line ends amongst heaps of sand. At this point there is a grating still lying on the ground which may possibly have been used as a sieve for the sand. Sand appears to have been gathered from both sides of the line for a considerable distance along all three termini. The shoreline of Port Phillip Bay is about 300m east of this point. The sand tramway appears to have operated until sometime in the 1970s, when alterations to the piping north of the No.1 pump have cut the line well short of its terminus. Today, long sections of track east of the No.1 pump remain intact. An isolated section of tramway also exists on the western bank of the tidal lagoon and north of the road to the beach. This line appears to have been laid entirely in prefabricated track panels, and it is unclear as to the use to which it was put.[29]

In 1982 the use of tramways at Moolap (apart from the conveyor system) ceased, and all surviving rolling stock was concentrated at Laverton. Apart from the usual side-tipping skips and salt bins, a number of special-purpose vehicles were

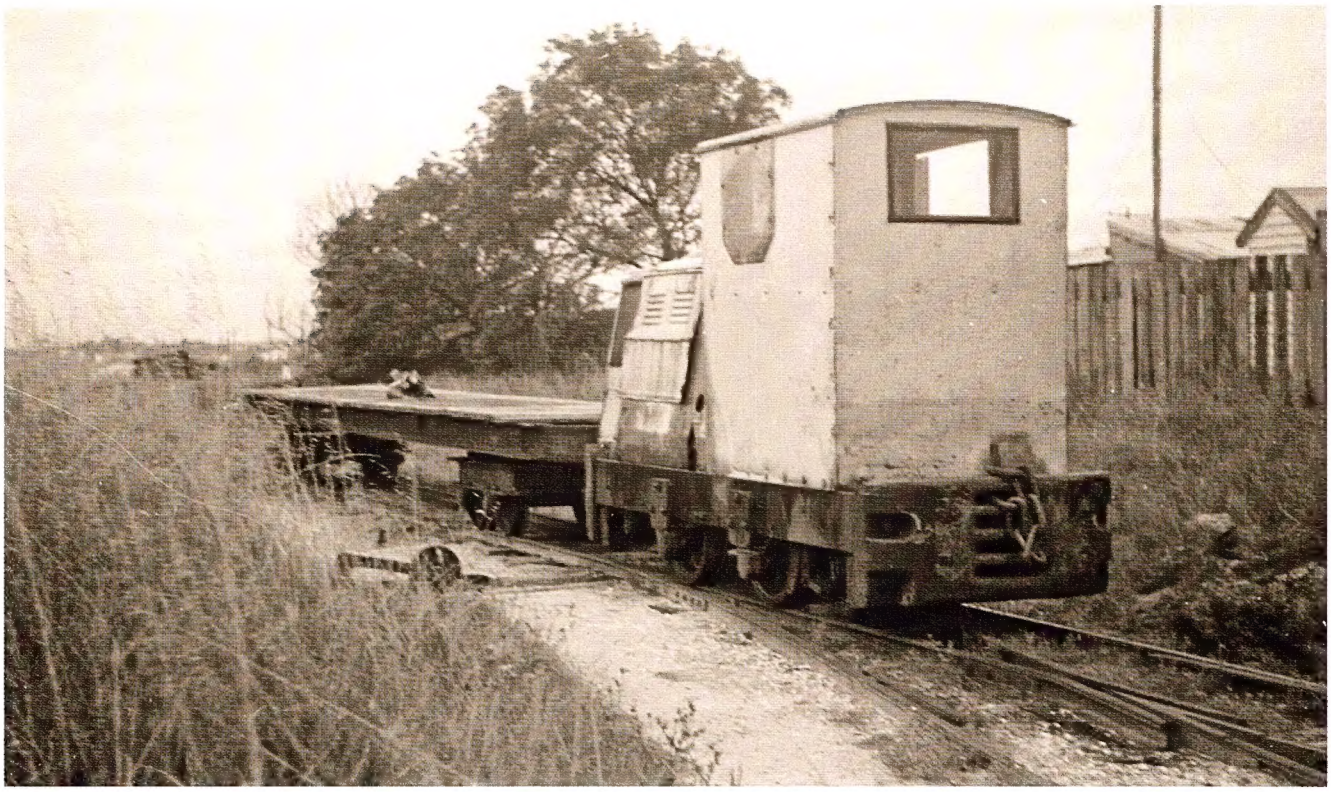


One of the Day's tractors, at the Belmont Common Railway in December 1976. *Photo: Ray Graf*

observed at Laverton during this period. This included at least one bogie flat wagon, most likely one of those previously used on the export tramway from the Moolap refinery to the Cheetham siding, and one passenger carriage for workmen. There was also a four-wheeled diesel fuel tank used for re-supplying locomotives out on the tramway system. Perhaps the most unusual was a kind of mobile lunchroom made from the body of an elderly motor van mounted on a four-wheel frame.[30]

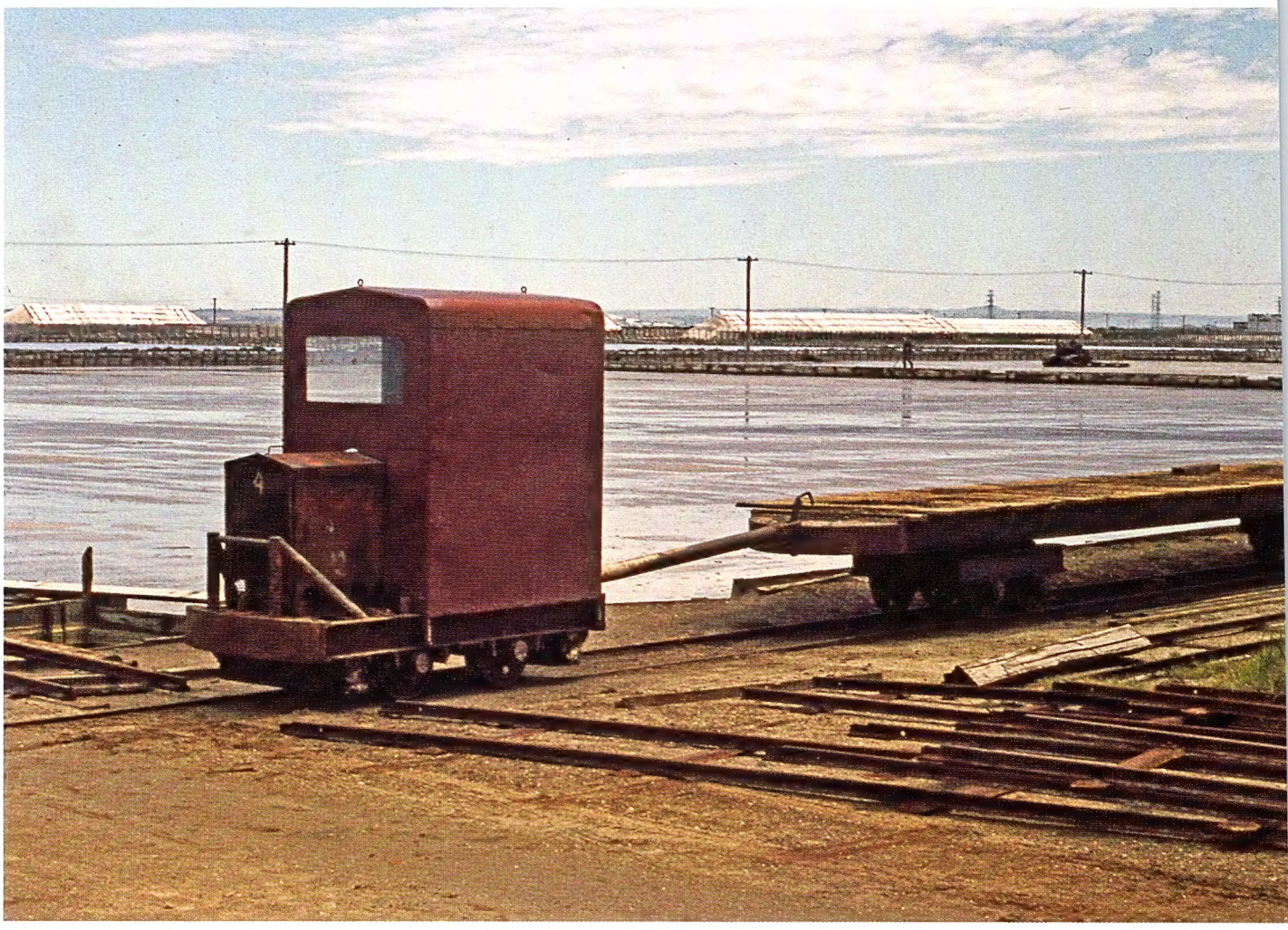


The 'workmans' wagon at Moolap sitting on an isolated section of track. *Photo: Norm Wadeson, courtesy Mike McCarthy*



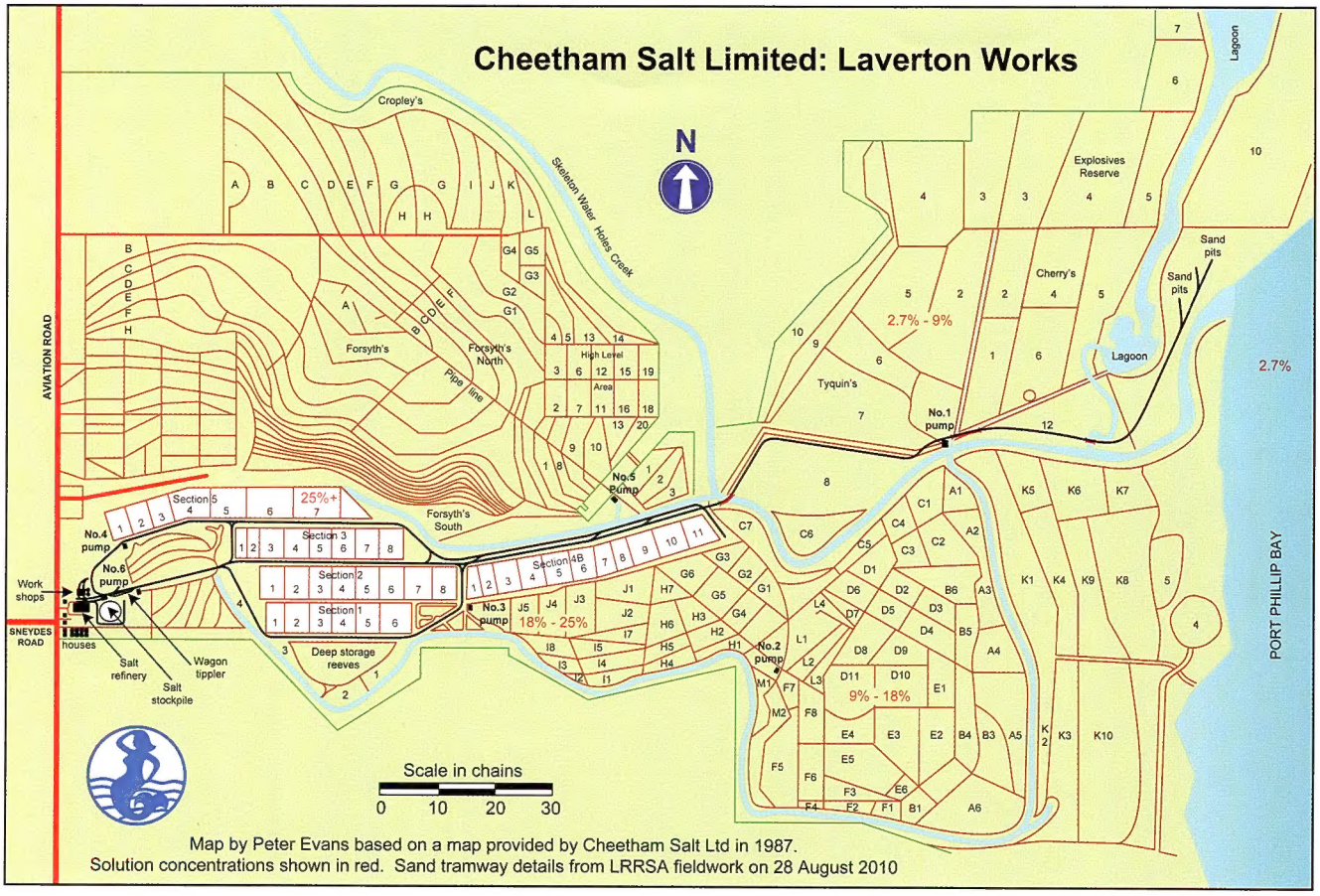
Above: *A bogie flat-truck of the type used for construction work around the salt pans and for transporting bagged salt to Cheetham's siding on the Geelong-Queenscliff railway. The locomotive is one of the Ruston 30DLUs. Photographed on 1 March 1969 by Phil Rickard*

Below: *Cheetham light loco No.4 with a bogie flat truck at Moolap on 2 November 1965. Note the method of making a temporary crossing of two tracks by simply removing a section of rail. Photo: Ray Graf*



Above: *'Rotten Row' at Moolap on 2 November 1965 with, from left, a bogie flat-truck, an improvised loco fuel wagon, a derelict Day's loco, and a powered winch for placing the conveyor system on the crystallisers for harvesting.* *Photo: Ray Graf*

Below: *One of the Ruston 30DLU locomotives at Moolap on 1 March 1969 with near-original body panels.* *Photo: Lionel Rickard*



Map by Peter Evans based on a map provided by Cheetham Salt Ltd in 1987.
Solution concentrations shown in red. Sand tramway details from LRRSA fieldwork on 28 August 2010

Production of salt at Laverton

The sea (including the water of Port Phillip) is approximately 2.7% salt. The production of salt by the evaporation of seawater required certain optimal conditions: a large flat area close to the sea, in a low rainfall area with high summer temperatures was the most important of these. A non-porous clay subsoil was also important to retard leakage of the solutions. The area was divided into a chequer board of concentrating pans used to contain and separate the brine solutions during the evaporation process. Sea water was pumped into the pans using the No.1 pump during September and October and evaporation by sun and wind ('sunning') commenced. Ten acres of sunning pans were required for every one acre of crystallising pan. When the solution reached a concentration of about 19% it was pumped by the No.2 pump into precipitation pans where Calcium Sulphate (gypsum) dropped out of the solution, leaving the concentrated salt and water ('maiden brine') to be pumped off by the No.3 pump into crystallising pans. The crystallising pans had low timber walls and a level floor of compacted washed sand. Further evaporation took place in these pans and the salt was deposited as the solution became further and further saturated. This left a deposit of crystallised salt on the floor of the pans between 50mm and 200mm thick. When the process had reached an optimal point, the remaining water ('bitterns') was pumped-off and returned to the sea to leave the salt exposed ready for harvesting.

The salt was removed from the pans by a specially adapted tracked vehicle which took a cut 2.4 metres wide, and the salt was moved by a portable conveyor running on 610mm gauge tracks to the waiting trucks on the tramway alongside the pan. Eight 2.5 tonne trucks made up a rake and were hauled to the works by a diesel locomotive, where they entered a rotary tippler. Locomotives were usually worked bonnet-first to the works and cab-first to the crystallising pans. Although the line had a negligible gradient out on the crystallising pans, the run to the tippler had a significant grade against the load and, with the rails covered in brine dripping from the trucks, this could be tricky. To improve adhesion, rail-washing tanks were fitted to the locomotives and the rail was 'washed' with water prior to the final run to the tippler. As each truck was inverted in turn, its contents were moved by another conveyor running on metre-gauge tracks to a salt dump containing from 20,000 to 30,000 tonnes of salt. Rainwater assisted in washing impurities from the large stack of salt.[31]

Until 1985, the salt was moved to the Laverton refinery by an interesting operation carried out by one man. A locomotive and rake of nine side-tipping trucks was drawn up adjacent to the salt stack. With the locomotive idling in neutral, the driver entered a Komatsu-Bucyrus power shovel and proceeded to fill the truck adjacent to the loco. The whole train was then given a gentle 'nudge' with the bucket of the shovel to position the next truck within reach of the shovel. When all the trucks had been loaded (without the operator having left the cab of the shovel), he returned to the locomotive, engaged the drive and proceeded to the refinery where each truck was tipped in turn into an underground hopper.[32] In 1985, this part of the tramway system was replaced by motor trucks.

On arrival at the refinery the salt crystals were crushed to 12 mm or less in size and washed in a concentrated brine solution to remove impurities. The salt was then screened, washed in brine a second time, and dried in a centrifuge. By this stage the salt contained about 2% moisture. It was then transferred to a revolving oil-fired kiln and heated to 300°C which, in five minutes, reduced the moisture content to 0.05% and killed any organisms present. The salt was then crushed and sieved to five or six different grades to suit customer requirements, and bagged and stacked ready for dispatch. Using this method, 6.5 tonnes could be processed every hour.

Above: *Ruston 30DLU No.3 with a rake of stainless-steel skips taking salt from the bulk stockpile to the Laverton refinery in October 1984. Photo: Peter Evans.*

Below: *The same train as in the previous image dumps its salt into elevator system at the Laverton refinery in October 1984. Photo: Peter Evans.*

Above: *A rake of wooden-bodied salt trucks heading to the Moolap refinery behind a Ruston 30DLU on 1 March 1969. Photo: Lionel Rickard*

Right: *Loaded trucks await unloading at the Moolap refinery on 1 March 1969. Photo: Lionel Rickard*

During the peak output season of June-July-August, up to 1,000 tonnes per week left the Laverton works. Most of the salt from Laverton was used in the tanning industry and had small amounts of Boric acid, Sodium Fluoride, Naphthalene and Zinc oxide added for this purpose. Other uses were in the chemical industry, food processing and preservation, explosives manufacture, stock-licks for cattle raised on salt-deficient pastures, and as table salt for human consumption.[33]

The last days at Laverton

In 1985, Cheetham Salt Limited took over a number of companies including stock-feed company Barastoc. Encouraged by this success, Cheetham Salt went on what was described as a 'takeover binge' at a cost of forty million dollars, adding garden-product firms Yates Seeds, Rite-Gro and Hortico to its stable of companies. The takeover resulted in the walk-out of a large number of executives from these companies, many of whom started new ventures in direct competition to the companies they had just left. As a result, the earnings of the new acquisitions failed to meet expectations, and created the need to foot an ever-mounting interest bill. In the last half of 1986, Cheetham's turnover rose by 3.1% but its profits slumped by 23%. As a result, Cheetham Salt was itself left exposed to takeover by Industrial Equity Limited.[34] It was during this troubled period that the LRRSA made its last official visit to the Laverton site, on 7 March 1987. This was also a time when pumping ceased in the outer sections of the ponding system, leading to a loss of 85% of the shorebirds using the artificial wetlands as habitat. At this point, it was realised that ongoing pumping was the key to birdlife using the area, which would have important ramifications for the future of this part of the saltworks.[35]

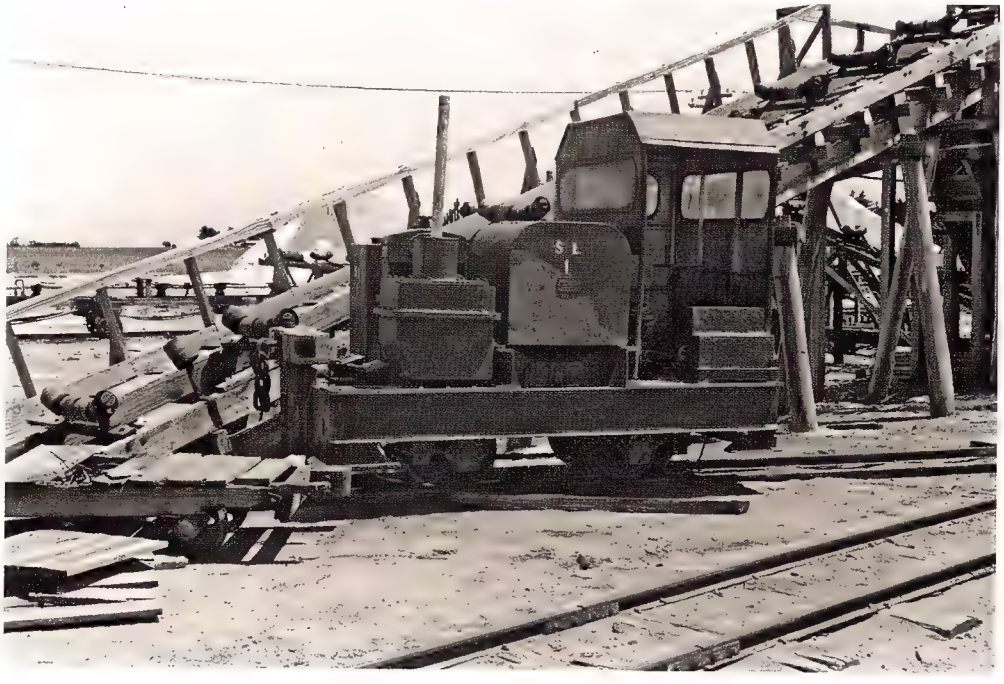
There was no harvest in 1986-87, reputedly due to the need for extensive repairs to the salt pans. There was the possibility of all the locomotives and rolling stock being transferred to the Bowen saltworks in Queensland, although the Laverton works would continue to process salt from Sea Lake and Moolap.[36] Long sections of rail were removed from the Laverton tramway system for re-use for the conveyor system at Moolap. Despite the expressed pessimism of the Laverton employees, the tramway system was re-opened for a harvest of thirteen sections in 1989-90. This required the track to be cleared of weeds, new liners purchased for the tramway salt bins (the old ones had been sent to South Australia), and the repair of the Ruston locomotives by fitter Frank Kennedy. Ruston locomotives No.1 and No.2 did most of the work but No.3, which had a seized main drive, took no part in the harvest. The less-powerful Ruston No.4 was relegated to shunting duties around the works.[37] After having spent $250,000 reconditioning the works for the 1989-90 harvest, another harvest of 19 sections was undertaken on 1990-91 for an expected yield of 14,000 tons, using a similar roster of Ruston locomotives but with No.3 now returned to service. However, the disposal of all the light locomotives and the portable track for repairing the salt pans proved to be a fatal mistake, with the salt pans deteriorating quickly. In addition, while road vehicles could be used for salt transport at Moolap, the ground at Laverton was too soft for this change in technology.[38]

On 11 November 1992, with less than an hour's notice to its employees, Cheetham Salt called an abrupt halt to its harvesting activities at both Moolap and Laverton.[39] The Laverton works were to be retained for a short period, but the artificially created wetlands of the brine concentrating system were to be handed over to Melbourne Water as a bird sanctuary. The area occupied by the salt pans was sold to become a housing development. Because of its industrial significance, it was hoped to retain a section of tramway, the No.3 pump house and two crystalliser pans as part of the open space of the new housing development. Unfortunately, the developer turned down this proposal.[40] On 30 October 1993, the consortium responsible for purchasing the Ruston locomotives, rolling stock and remaining rails ran a public tour to the site culminating in Rustons 1, 2 and 3 triple-heading a rake of 22 salt bins loaded with rail enthusiasts along the remaining length of the tramway system.[41]

A rake of empties hauled by a Ruston 30DLU heads back out along the line on the eastern side of the Moolap crystallisers. Photo: Ray Graf

Motor Rail 'Simplex' 7351 of 1938 at the bulk salt dump at Cheetham Laverton on 1 March 1969. *Photo: Lionel Rickard*

This was indeed a sad day in Victoria's industrial history. Gone was Victoria's last privately-owned industrial narrow-gauge tramway system. Gone was a system of salt harvesting that had been practised on the shores of Port Phillip Bay for over a century. Gone was the seasonal workforce that gathered at Laverton each harvest season to bring the salt in to the stockpiles. Gone were the many items of unique machinery constructed in the Laverton workshops to assist with the harvest. About to go were the wooden tanks, and the miles of wooden channel and retaining walls used to pump the brine around the works and to hold back the walls of the crystallising pans. Under threat were the processing works standing silently under lock and key. Shortly thereafter, the entire site was bulldozed and construction began of artificial lakes, a Greg Norman designed golf course, and a rash of 'McMansions'. Although the Moolap and Laverton sites are no more, Cheetham Salt Limited is today a wholly owned subsidiary of the Ridley Corporation and, more than a century after its inception at Moolap, still Australia's largest salt producer.



Left: *Motor Rail 'Simplex' 10058 of 1948 at Cheetham Laverton. Photo: Geoff Baxter*
Right: *Motor Rail 'Simplex' 10058 of 1948 at Alexandra in 1990. Photo: Peter Evans*

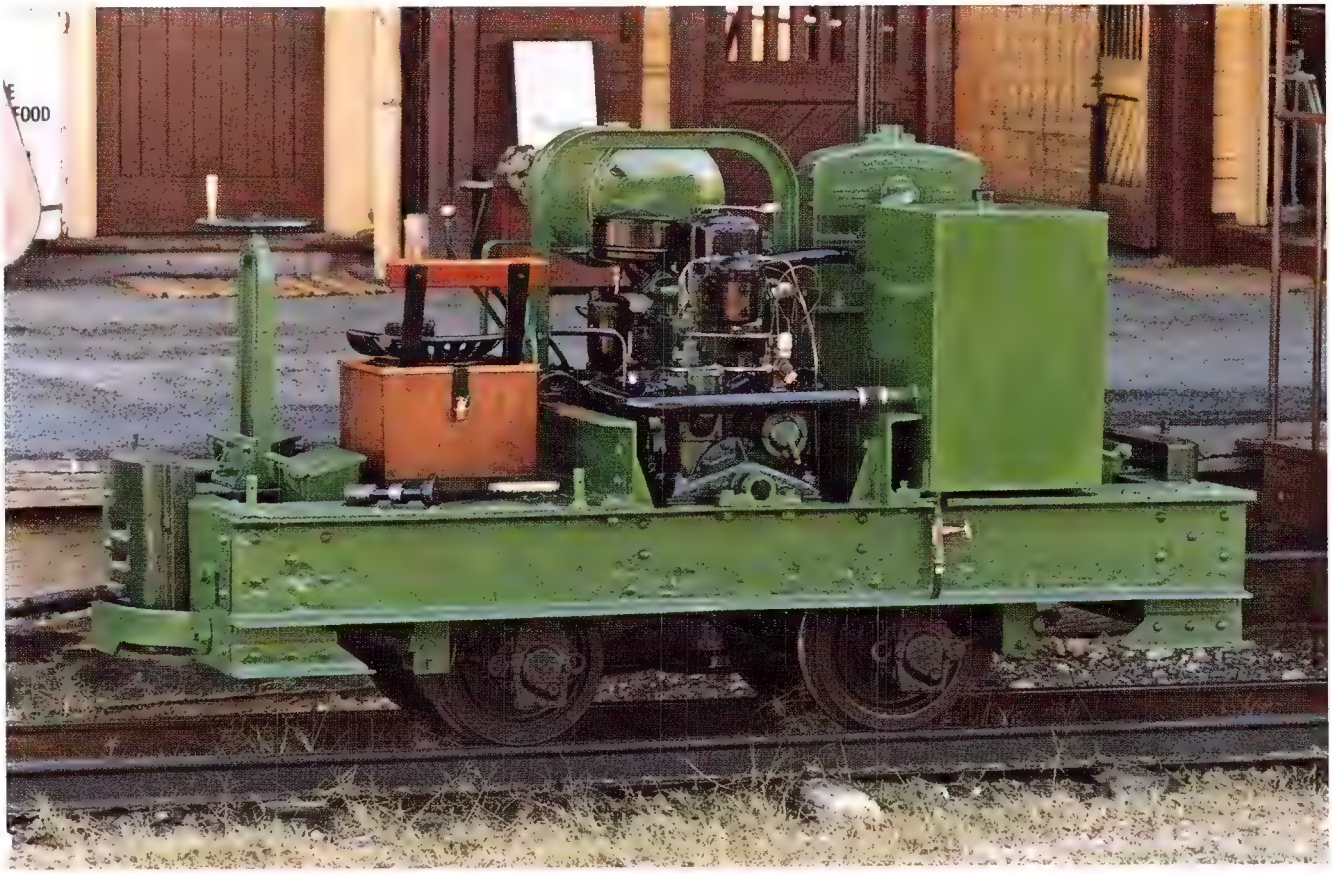
The Laverton locomotives

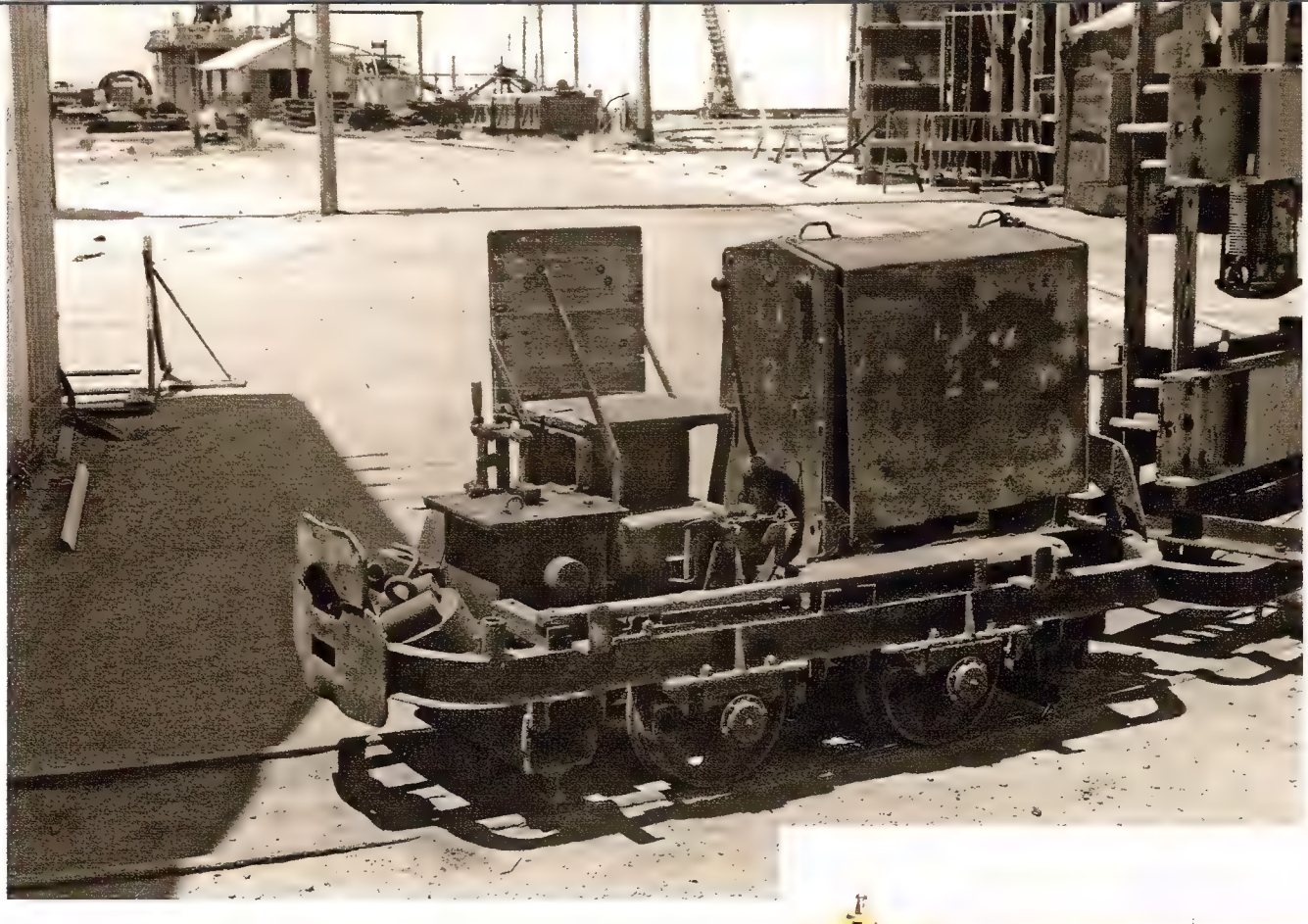
At its greatest extent, the Laverton fleet consisted of seven locomotives. Mainstay of tramway operations at Laverton were three Ruston & Hornsby 30DL 4wDM locomotives purchased new by Cheetham Salt and originally fitted with 3VSHL engines. These engines had three cylinders and a maximum speed of 1270 RPM at no load. The locomotives were numbered: No.1 (Ruston 252805 of 1947, engine number 251909, ex Geelong works); No.2 (Ruston 283509 of 1949, engine number 294364, new to Laverton on 20 October 1949); and No.3 (Ruston 283510 of 1949, engine number not known, ex Geelong). At Laverton, these locomotives were re-engined in 1975-76 with Ruston 3YDA engines and, after running through an expensive series of clutch plates in the early 1980s, converted to hydraulic drive in 1982-83 at a cost of some $20,000 each. At an unknown date a fourth Ruston, 320555 of 1951 (a smaller 20DLU 4wDM fitted with a twin-cylinder 2VSHL engine number 317242, maximum speed no load 1272 RPM) was purchased second-hand from the Melbourne & Metropolitan Board of Works and became No.4 in the Laverton fleet. The latter retained its original engine and mechanical transmission to the end. The last recorded work on any of the Ruston locos was done in March 1992.[42]

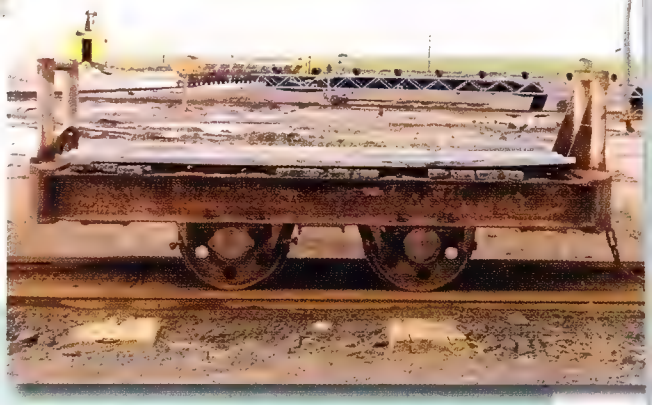
With the closure of the refinery in November 1993, all four Rustons went to the Bass River Railway,[43] an ill-fated tourist venture which eventually saw the locomotives sold off in 2005 to recoup their storage costs. One of the hydraulically-driven Rustons appears to have been scrapped (No.2, 283509 of 1949); one, externally modified, was painted dark green (No.1, 252805 of 1947), and one (No.3, 283510 of 1949) was virtually unchanged but painted maroon. No.4 (320555 of 1951), the sole remaining loco with its original mechanical transmission, was observed dumped in a paddock near Bass and slowly rusting away.[44] The remains of this locomotive have since been purchased by the writer and it is now at the Alexandra Timber Tramway awaiting restoration. The two surviving diesel-hydraulic locomotives have also found a new home: the green one (No.1) at Peter and Jack Loney's privately-owned Gherang Gravel Tramway at Wensleydale in Victoria;[45] the maroon one (No.3) is now in the Harris family collection near Ballarat.

Ruston 20DLU No.4 at Laverton in March 1987. Photo: Peter Evans

In addition Laverton had two Motor Rail 'Simplex' 4wDM diesel locomotives, the first of which was 20/28hp 2.5 ton Motor Rail 7351 of 1938. This was new to the firm of Diesel Locomotive Hirers in the UK (a Motor Rail subsidiary), and, after reconditioning at the Motor Rail works, was sold to John Howard & Co. Ltd of London in 1946 and shipped to Australia







Above: *Cheetham light loco No.2 on the line between the workshops and refinery at Laverton. Photo: Geoff Baxter.*
Right: *What is very likely the remains of Cheetham light loco No.3 converted to a flat truck at Laverton in October 1984. It was last sighted in a similar condition at Bass River in December 2003. Photo: Peter Evans*
Below: *Cheetham light loco intriguingly numbered '5' or '6' with a rake of what appears to be trucks of gypsum at Moolap on 2 November 1965. Photo: Ray Graf, who recorded the loco number as '6' on the slide.*

for contracting work. It was used on the construction of Kings Wharf at Geelong in 1951, and the Belgrave road-over-rail bridge in 1954. Sometime afterwards, it was sold to Cheetham Salt for use at Moolap and, at an unknown date, was transferred to Laverton, where it became No.7 in the Laverton Fleet. The larger and more modern of the two Motor Rail diesels was 32/42hp 4 ton Motor Rail 10058 of 1948,[46] purchased at a cost of £2227 10s 0d. It was first used on the State Rivers & Water Supply Commission's Rocklands Reservoir before being moved to the Tarago aqueduct tunnel near Jindivick in West Gippsland. The locomotive was purchased second-hand by Cheetham Salt in August 1957. It became No.5 in the Laverton fleet.[48] Both of these Motor Rail locomotives were purchased by the writer in 1986 and 1987 and now reside at Alexandra. Motor Rail 10058 has been restored and is operational (using the engine from 7351), but the resurrection of 7351 is a long-term project yet to be undertaken. Also at Alexandra are the frame and wheels of Cheetham Day's locomotive No.3 and two Cheetham tramway salt bins. (The other two Cheetham Day's locomotives are preserved at Puffing Billy and on a privately-owned tramway near Canberra).

The locomotive bearing fleet No.6 at Laverton was 'Cheetham No.1'. It was nominally the first (but probably the last built) of at least five 'light' locomotives constructed for or at Cheetham Salt from around the early 1940s, when horses were still in use on parts of the tramway system.[49] After No.2, which had a skip frame, no cab and high buffing plates (presumably later scrapped), the design seems to have settled down to a standard, and the subsequent locos all had welded frames, substantial cabs and braced buffing 'stanchions' front and rear. These locomotives apparently had Ford engines. Of this design, one served as the Moolap manager's 'run-about' and survives in a private collection at Geelong. A second lies derelict at a caravan park south-east of Geelong. A third of this type was noted in 1984 (as a frame and wheels only) in use as a flat truck at Laverton, and was later abandoned at Bass River. Intriguingly, one of this class of loco was photographed in 1965 bearing the number '5' or '6', (the photographer thought '6') so there was possibly another!

Above: *Cheetham light loco No.1, which operated the sand tramway at Laverton, in March 1987. Photo: Ray Graf*
Below: *Remains of the sand tramway at Laverton in August 2010. Photo: Peter Evans*

Of the five that are definite, Cheetham No.1 was the largest and last-built, and had a professionally constructed frame quite unlike the cruder chassis of the others. In common they had four unsprung wheels, the seating arrangement with petrol tank underneath, and the final-drive right-angle reversing and reduction gearbox. Cheetham No.1, as the main light loco at Laverton (LL2 was also photographed there), was principally used for haulage on the sand tramway. In September 1988 the writer was fortunate to be able to purchase this unique locomotive for preservation. The remainder of this article outlines the story of its rescue, its restoration, and its eventual return to service.

Rescue and restoration

After it was last used around 1976, Cheetham No.1 was abandoned on a siding exposed to the elements. There it remained for twelve years until it was purchased by the author for $50 in September 1988 and hauled into the Laverton works by Cheetham Salt loco driver Harold Taylor using Ruston No.1. On the same day, Cheetham No.1 was transported direct to the Alexandra Timber Tramway where it was stored undercover, but lay largely untouched for a further fifteen years. In April 2003, the locomotive was removed to the writer's residence in Melbourne, where it was photographically recorded and carefully dismantled into its component parts. This was no easy task given the long exposure to the salt-laden air at Laverton, and some bolts and nuts proved to be beyond saving. The frame was then returned to Alexandra where, over the summer of 2006, it was wire-brushed back to bare metal, rust-converted and primed, and given three coats of Brunswick Green enamel. (This work was carried out in the open at Alexandra in order to prevent the writer's workshop being covered in the large amount of debris from the cleaning process). Paint scrapes revealed that the bottom coats on the frame and superstructure were Brunswick Green and bright yellow respectively, not the faded all-over yellow in which the locomotive was obtained, so it was decided to stick to the original colour scheme.

With the frame safely transported back to Melbourne, it was packed-up on red gum blocks and the process of bolting back various cleaned, repaired and repainted components could begin. By June 2007 the locomotive had been re-wheeled, the superstructure re-affixed, and the locomotive was returned to Alexandra to await the fitting of the engine and gearbox.

Items replaced or modified during restoration included:

- Repair of flogged-out splined shaft for final-drive gearbox
- New drive sprockets for final-drive gearbox and rear axle only
- Welded repair to a leading-wheel flange
- New sheet-metal front-wheel splash-guards and top bonnet covers
- All timberwork replaced (using existing metal brackets wherever possible)

The engine is a straight-line OHV four-cylinder BMC 'B series', developed after the Second World War to power the Austin A40 and starting as a 1.2 litre engine developing 39bhp. During the ensuing years, it was progressively enlarged by increasing the bore until, by 1961, the engine had a capacity

Minus engine and transmission but starting to look like a locomotive again. Cheetham light loco No.1 at the writer's residence on 3 February 2008.
Photo: Peter Evans

of 1.622 litres and developed 83bhp. The engine was used in a wide range of vehicles including the MGA sports car. Given that Cheetham No.1 is said to have been built around 1962 and the fitters at the Cheetham Laverton works stated the engine came from a 'small Morris bus', it is likely that it is from a Morris J2 van, the firm's first unitary construction commercial vehicle, which came in pick-up, mini-bus and cab-chassis formats. This tends to be confirmed by the engine number, which carries an industrial series engine code.

Repairs to the engine and gearbox during its restoration included:

- New gaskets for most components
- New clutch plate
- New battery, starter motor and alternator
- Most of the auxiliary wiring replaced (main loom retained)
- Radiator professionally repaired
- New rubber engine mounts and radiator hoses
- New section of exhaust pipe and bottom element of the air cleaner
- New gearbox linkage swivel joints
- Fitting of horn and headlights for accreditation

The refurbished engine and gearbox were bolted back together and lowered into the frame. Work then stated on replacing the electrical wiring and making the various connections to fuel, water and exhaust. The engine was started successfully in August 2009, and the locomotive was returned to the rails one month later, but unfortunately could not be completed in time for the Centenary celebrations for the Alexandra railway due to problems with the carburettor and a leaky exhaust connection.

The locomotive finally turned its first wheel on 13 February 2011, albeit in reverse as the only gear able to be selected. After further attention to the gear linkages, carburettor, exhaust and brakes, the locomotive was ready for a more definitive trial on 13 June 2016. After last minute adjustments to the fuel pump and throttle linkages, the loco was run up and down on a siding for half an hour.[50] The final step in the restoration process was the writing of operational and engineering manuals for accreditation under the Rail Safety Act 2006.

The writer gratefully acknowledges the assistance of Bryan Slader (engine and gearbox), Bruce Alsop and Philip Thorn (fitting and turning) and Carl Hopkins (electrical wiring), without whom this restoration could not have been completed. The author would also like to thank Wal Rickard, former manager of the Laverton works, for a tour of the refinery and information provided in 1987; Norm Houghton for access to items from the Cheetham Archives (and permission to trespass on his 'patch'); Phil Rickard, Geoff Baxter and Mike McCarthy for photographs, and Bernie McCarrick of Parks Victoria (formerly with Cheetham Salt) for access to the Cheetham Wetlands in order to carry out the mapping of the sand tramway.

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13. *The Argus*, Wednesday 21 March 1894.
14. *The Argus*, Thursday 26 July 1894; Friday 27 July 1894; Monday 30 July 1894; Tuesday 31 July 1894; Wednesday 1 August 1894.
15. *Moolap Salt Works Act* No.1411 of 1896. See also *The Argus*, Saturday 30 November 1895; Wednesday 15 January 1896. In 1970, the lease was successfully extended to 1995.
16. PROV,VPRS 932/P1 unit 26, file 2968.
17. Richard Cheetham death certificate, registered in Ballarat, certificate No.7696. His grave is in the Methodist section, path 01 grave No.192.
18. *The Argus*, Saturday 3 July 1915; Saturday 15 January 1916.
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25. Personal observation by the author during several visits to Laverton and Moolap between 1984 and 1988, and maps provided by then Cheetham Laverton works manager Wal Rickard.
26. Managing Director's report, 26 February 1923.
27. Order cards, Cheetham archives.
28. Letter, Cheetham Salt to ICI South Australia, dated 11 July 1945,copy supplied by Norm Houghton.
29. Site inspection by an LRRSA team (including the author) on 28 August 2010.
30. Personal observation by the author at both Cheetham Laverton and Bass River.
31. Information from Mr. Wal Rickard, Manager of Cheetham's Laverton works in 1987. The writer was fortunate enough to be able to observe these processes at work.
32. Personal observation by the author, September 1984.
33. Information from Mr. Wal Rickard, Manager of Cheetham's Laverton works in 1987.
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39. *Light Railway News* No.91, December 1992.
40. *Light Railway News* No.93, April 1993; No.95, August 1993. The author was a part of the group trying to have a section of the tramway system retained.
41. *Light Railway News* No.97, December 1993.
42. Cheetham Laverton locomotive manuals, engine manuals and parts stock cards in possession of the author. Note that, around 1982, at least one Dorman 4DA replacement engine was obtained, but it is not clear to which machine or locomotive it was fitted.
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45. *Light Railways* 189, page 27.
46. Information from Clive Waiters from the Motor Rail works list, via John Browning.
47. PROV,VPRS 6009/P0, correspondence numbers 16783, 7183 and 27792.
48. For a history of this locomotive at Tarago see *The Tarago Aqueduct* Tunnel in *Light Railways* 116.
49. The first mention of 'light loco' in the Cheetham parts register is January 1944, copy kindly supplied by Norm Houghton.
50. Restoration history compiled from various issues of *Timberline*.

Guy's Tramway at Pebbly Beach South Coast of NSW

by Ian Barnes and Ian Bevege

Introduction

The far south coast of New South Wales has traditionally been a major timber milling area since the mid-19th century. Numerous mills were established and a few remain active into the 21st century. Jim Longworth provided a digest covering several of the early mills in *Light Railways* No 151.

Four generations of the Guy family were major saw millers from the mid-1870s into the 1930s trading as Batemans Bay Sawmills and Timberyards. As well as sawmilling, Francis Guy I (1804-1881) was involved in storekeeping, hostelry, postal services, shipbuilding and ship owning in Nelligen and Batemans Bay. His son Francis Guy II (1837-1910), grandsons George Guy (1859- 1932) and Francis Guy III (Frank, 1863-1931), and great-grandson Francis Guy IV, 1885-1947 operated their mills variously at Cullendulla, Benandarah, Bawley Point, Pebbly Beach, and Batemans Bay.

George Guy in his submission to the Legislative Assembly of NSW[1] stated that Guys then had a capacity of 100,000 super feet per week (approximately 250 cubic metres) from their Benandra (sic) and Cullendulla mills and were then building their Borley (sic) Point mill. They had another mill in Batemans Bay (sold to John Perry in 1901) and established their Pebbly Beach mill in 1908.[4]

Pebbly Beach lies within Tranquility Bay on the south coast of New South Wales, about 10 kilometres directly northeast of Batemans Bay. Most tourists who now visit this idyllic spot with its sandy beach and quiet grazing kangaroos would not appreciate that over a hundred years ago it was an active sawmill site.

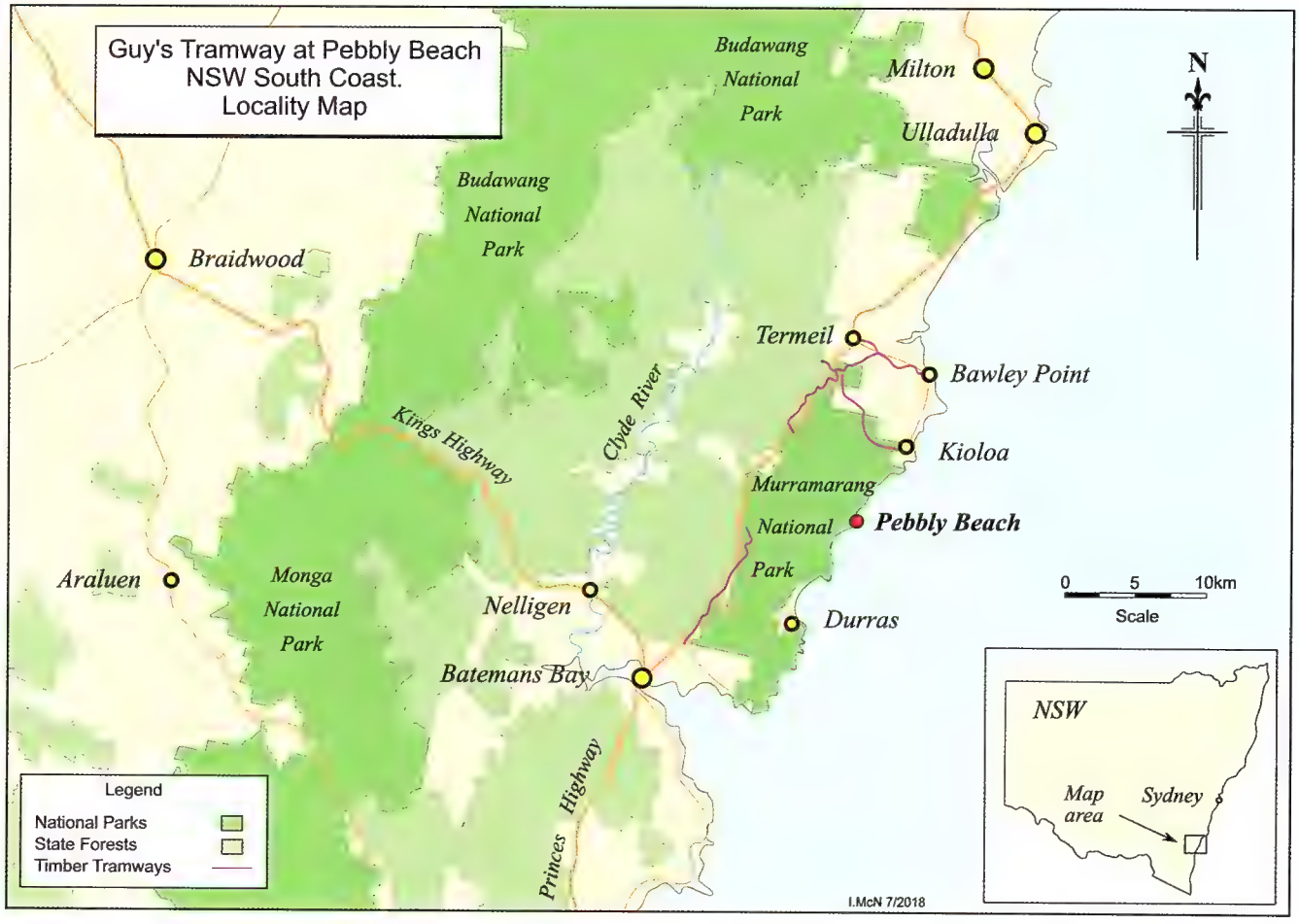
Of greatest interest to *Light Railways* readers is perhaps the short tramway from the sawmill to a nearby rock platform where bundles of sawn timber were loaded directly onto ships for delivery to coastal markets. The only remaining obvious sign of this sawmilling activity now is a lone timber pole concreted in the rock platform at the ship loading site. However, with some investigation, much more can be found.

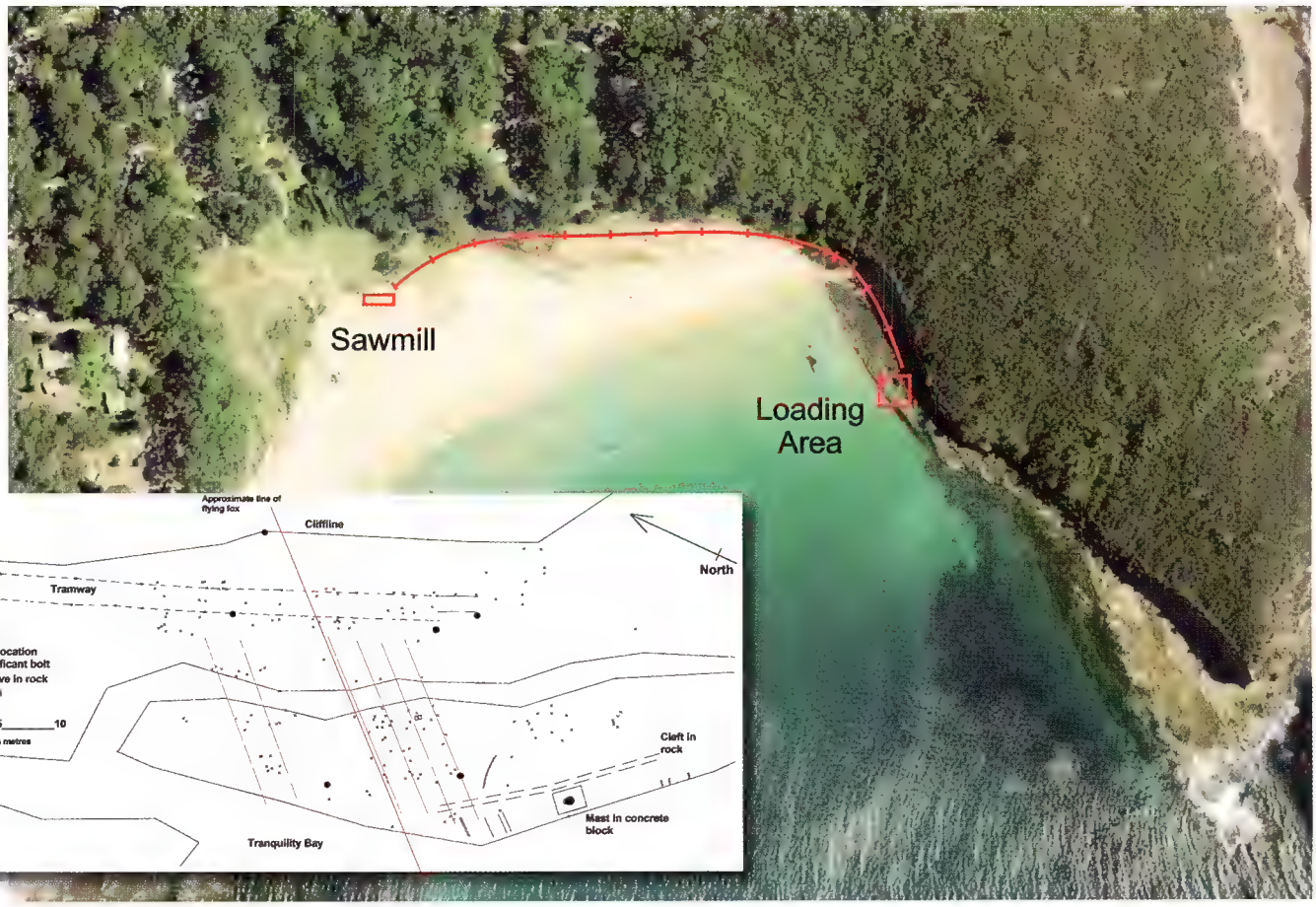
Background

In 1908 the sawmill (trading as Pebbly Beach Timber Mills), with associated settlement, was established on the sand dunes and lower slopes of Pebbly Beach by Mr Francis Guy II with his son George Thomas Guy.[4] This sawmill was then operated into the 1920s by George's son Francis Guy III and cut local hardwoods into large section (30-45 cm square) for resawing in Sydney or for export, including to New Zealand, until it closed in 1929.[2,3]

Although the Pebbly Beach settlement was connected by basic horse and cart tracks to other settlements some distance inland, its main connection with the outside world was by sea. Small coastal steam ships of the Illawarra and South Coast Steam Navigation Company (ISCSNC), including purpose built timber carriers SS *Benandra* and SS *Bodalla* (1914-1924) and SS *Bergalia* (from 1926), loaded and unloaded at the flat rock platform at the northern end of the beach using crane and cable systems.

As part of the subdivision of the land in the area, two land portions numbered 29 and 30 were created for the venture, and were subsequently enlarged with two new extra portions numbered 38 and 39 for the purposes of "Wharf and Crane" and "Erection of buildings". A study of the few photographs available indicates the sawmill was on Portion 29 of the Kioloa parish map,





Site map. Background photo from the NSW government SIX mapping web site.

Photo of Pebbly Beach settlement. Copy of image from The Clyde River and Batemans Bay Historical Society records

County of St Vincent and this has been corroborated by long-term local resident Stuart McFarlane who has links to the families of the original settlement. It is not known why a separate Portion 30 was initially created but it may have been an early plan to load ships from that part of the rock platform in shallow water within the eastern boundary of the portion.

Because of the sequence of land portion creation it is possible that other portions were later formally established for loading and settlement purposes respectively as the sawmilling operation matured. One thing is certain from investigative field work – the loading facilities were on Portion 38.

A detailed plan of Portion 38 (Special Lease 19.3) has become available. It was drawn in 1919, presumably soon after the portion was created. Of great interest to *Light Railways* readers, and which sparked this investigation, is the marking on the plan of a tramway.

The tramway of approximately 450 metres in length connected the sawmill with the loading area on the rock platform. It was principally used for transporting bundles of sawn timber from the sawmill but it was also used for transporting supplies from the ships back to the settlement and sawmill.

Current Field Evidence

From seven field visits between 9 May 2014 and 31 May 2015, and a study of both historic maps and the few old photographs available, a number of observations have been made.

The Sawmill Site

Despite some suspicious humps and hollows, there is almost no field evidence of the sawmill or of the nearby original settlement. The sawmill is believed to have been on the sand at the back of the beach but with 100 years of sand movement, and more recent recreation area development with earthmoving machinery, most evidence has been buried or removed. At ground level, the remains of a brick lined water tank, now filled with earth, can be seen near the tourist lookout platform. It is believed this tank fed water to the sawmill on the sand area to the east.

To the northeast and at the same level as the tank, still above and approximately 100 metres from the supposed sawmill site, is evidence of an earthen bank aligned toward the creek and, of interest, holding the rusted remains of 3 pairs of aligned steel pipes of approximately 15 cm diameter. It also contains a number of rocks which appear to have been brought to the site for some purpose. We have yet to determine the structure and its function but it may be the remains of a sawdust dumping facility given the substantial nature of the steel uprights.

The Tramway

There is also little remaining evidence of the tramway. Leaving the sawmill in a northeasterly direction it must have crossed the small creek, which empties onto the beach. Local oral history indicates the creek was crossed with a timber bridge. An earthen hump at the locality suggests a tramway's skewed approach to such a bridge with a length of approximately 20 metres and a height of 2 metres. A substantially worked timber piece with an iron spike remains on the northern bank, since displaced from its unknown original location. It is rotted at each end but the remaining length of 3 metres and 35 cm in diameter has three cut rebates of 100-190 mm width, consistent with braced piling. Local oral history suggests this timber, until recently, was an upright post in the creek, presumably as a piling so it is assumed to have been one of the supports for the tramway crossing.

A grass and sedge vegetated bank continues in a northeasterly direction behind the sand area and is a logical place for the tramway, protected from the worst of the highest tides and wildest seas. It is here that a section of the grassed bank reveals possible sleeper indentations. Nearby is a piece of straight sawn timber in the soil in alignment with that presumed for the tramway. It is 3.1 metres in length, 70 x 70 mm in cross section, and with evidence of nail holes. It was later confirmed as Turpentine, a desirable species for tram rails, although a species not found in the immediate locality. This timber was initially presumed to be a tram rail.

However, further on, a piece of highly corroded and twisted iron tram rail is easily found, recently rescued from partial burial in the nearby beach. Its current dimensions are 6.4 metres in length, 65 mm in height, and up to 25 mm in width. Local oral history (communications with Stuart MacFarlane) describes another piece of rail buried at the southern end of the beach, which reveals itself from time to time with large sea storms. Rather than wooden railed the tramway was likely to be iron-railed throughout.

Ian Bevege with a suspected timber tram rail

At the juncture of the beach and rock platform at tide level, and well below the bank, almost buried among rocks are two iron axle sets in close proximity. One axle has a wheel at both ends and the other has a wheel at least on the visible end. We presume these axle sets to be from the Pebbly Beach tramway. Despite the corrosion, the gauge appears to have been 1075 mm (3'6"). Each wheel has seven curved flat spokes, a flange depth of 35 mm and flange width of 40mm, a tread diameter of 450mm and tread width of 130mm, an axle hub of 150mm and an axle diameter of 70mm.

These axle sets are not always visible. Your intrepid investigators walked over this site a number of times without seeing any evidence until on the sixth visit, after a heavy sea and much sand had been washed from the beach, all was revealed! After some fast excavation with garden tools, measurements and photos were quickly taken before the tide returned.

Ian Bevege in full gardening mode on an axle set

The transition of the tramway from the back of the beach to the rock platform is not readily located due to burial from land slips but once well onto the rock platform the tramway location is well evidenced by the remains of a paired row of steel spikes in the rock for some 100 metres as it approaches the loading area.

The Loading Area

The loading area and approach of the tramway is on a typically flat wave cut platform about 15 to 30 metres wide, backed by a 10 to 20 metre cliff, and with an abrupt edge into ocean water about 2 to 4 metres deep.

It faces the ocean to the southwest so it is relatively protected from most adverse weathers except for blustery southerly winds and ocean swell. Under adverse weathers, especially at high tide, not only was an anchored ship at risk, prohibiting loading/unloading, but the loading area would have been awash with incoming waves. This required all engineering on the rock platform to be tightly anchored to the rock.

Over the years almost all infrastructure, apart from the one timber pole, has been washed away. However, because it was all anchored to solid rock, there is ample and readily identifiable evidence remaining as corroded steel bolts and spikes.

The Portion Pan 38 was surveyed - "measured in anticipation of demand" - in May 1919 but this does not link well with the sawmill startup date of 1908. Perhaps the site was in use for some time before a government official deemed it necessary to formalize existing arrangements. It is not known whether "in anticipation of demand" was real or not, perhaps an official tongue in cheek gesture.

A Special Lease over Portion 38 was subsequently granted to George Thomas Guy and his son Francis Guy IV on 23 April 1920 for a "wharf & crane". The Portion plan shows this was extended in 1922 to 31 December 1928 and extended again in 1929 to 31 December 1935. The text is indistinct but a final note of 28 March 1930 is made, possibly the termination of the lease. This would accord with the mill's closure in May 1929.[3]

Presently the site contains 219 identifiable iron spike or bolt locations. Most have corroded to rock level but some are up to 150 mm high, these mostly being larger eye bolts.

The tram line approach to the loading area is indicated by the rows of blue paper cups

The loading area showing the use of paper cups to show bolt locations.

To produce a map of these features all locations, labelled as field points, were identified and a distance measured to at least two of nine previously established reference points across the site. The reference points were usually the few large eye bolts remaining. Using trilateration each field point was plotted within the context of a sketch map of the site.

The fieldwork was interesting. The selection of a low tide/no wind/sunny daylight period in which investigators were available to take measurements proved to be a challenge. Any slight breeze during field measurements produced havoc, scattering the numbered paper cups that temporarily marked each field point, as did the occasional rogue swell that filled boots with cold salty water on more than one occasion!

There are too many iron spike and bolt locations to be able to identify the specific use of each. One imagines that over the years a few heavy seas probably required re-fixing of some infrastructure on the site, duplicating fixings. To make sense of all this see the inset on the aerial photo on page 21. This figure is our interpretation of the loading site infrastructure using both the field point pattern and what little other evidence exists in old photos and the Portion map. Other observers' comments will be welcome.

The authors' description and interpretation of what infrastructure existed, and its purpose, follows.

The Tramway

The approach of the tramway to the loading area is obvious because a double row of spikes, associated with sleepers and runs some 100 metres across the rock platform. Each round log sleeper, approximately 30 cm diameter and spaced about 5 metres apart, was spiked to the rock each end at tramway gauge width. The photo of the loading area shows squared timber girders approximately 20 cm x 20 cm were fixed to the top of the sleepers and then iron rail fixed to the top of the girders.

The tramway spikes become lost in other spike clusters at the loading area but two grooves in the rock spaced at anticipated flange width (derived from the gauge measurement taken from the axle sets) indicate where the occasional bogie set must have fallen, or was deliberately run off, from the end of the tramway. This location also ties in with the location of the skids onto which the timber would have been transferred. Therefore, we have indicated on the interpretation map where we conclude the tramway ended. There is no evidence to suggest the tramway was anything else but a single line from the sawmill having no deviations or branches.

We have no information at this time of the traction system for the tramway but it is presumed to have been horse assisted. Most of the grade with the timber loads appears to have been either on the level or downgrade. At the rock platform, if horse assistance was used, the horse(s) must have travelled beside the tramway rather than between the rails because of the elevated construction of the tramway at this point.

The Skids and Flying Fox

The Portion plan shows the alignment of the skids on which the timber bundles were stored ready for loading. The alignment corresponds with the location of the anchored ship.

The pattern of numerous iron spikes in the area also supports the configuration shown in our interpretation figure.

What appear to be three sets of skids were built similarly to the tramway. Each skid comprised a pair of long squared timbers, as girders, fixed on large timber blocks, all iron spiked to the rock. The squared timbers are thought to have been at the same level, or a little lower than the tram bogie bolsters to ease transfer of scantling bundles from tram to skids. The skid girders also appear to be cantilevered to some extent over the water.

The photo also faintly shows a rope and pulley system above the timber on the skids and extending in the direction of the derrick on the ship. It is surmised that the flying fox used a fixed steel cable on which a pulley block trundled and moved between ship and skids via a looped rope or cable wound by the ship's steam driven capstan winches. Rope burns in the rock at the water's edge (indicated as grooves on the interpretation figure) indicate that steel rope was used.

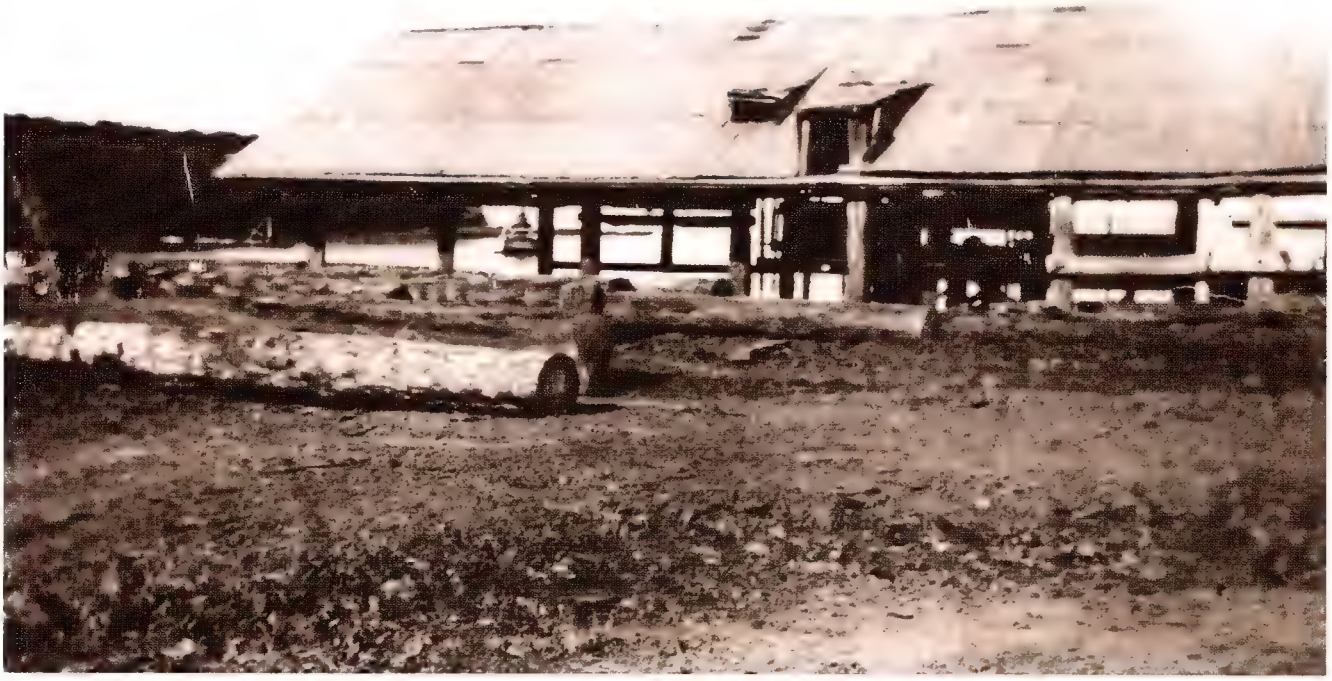
The whole arrangement suggests an anchor point for both the fixed cable and a pulley for the winding cable within, or on top of, the cliff. A search of both the cliff and the clifftop did not reveal any evidence of either but this is not surprising. The cliff is highly erodible and it is likely any previous anchor has since disappeared. The operational height of the flying fox precludes the use of the nearby crane.

The Crane

The remains of the crane, a grey ironbark timber mast, 5.5 metres in height and 35 cm in diameter, is set in the rock with a concrete base of 1.9 m x 1.4 m x 65 cm in height. The mast has 5-6 iron fittings, now highly corroded. At its base lies part of a cast iron wheel set horizontally in the concrete and above it an iron fitting suggesting a short vertical steel axle was fitted between the two. This corresponds to a hazy photo of the site taken from the sawmill which shows the mast had a derrick arm. One assumes the arm was supported from the top of the post by cable or steel rod. A similar derrick was erected on the wharf at Bawley Point sawmill a few kilometres up the coast, also owned by Francis Guy III - a photo of this crane in 1915 is depicted in Hamon 1994.[2]

The derrick arm would have swung in an arc off the post using the cast wheel as a pivot. An arc of grooves in the rock 5.4 metres from the axle hole corresponds with this movement. It is not known whether the grooves were formed by an object hanging from the derrick, such as a return weight, or possibly the derrick was supported by a trolley wheel part way along its length. The distinctiveness of the grooves suggests the latter, which means the derrick possibly had an extended reach from that suggested by the height of the supporting mast. The construction and operation of the crane is in accord with others used at nearby Kioloa and Bawley Point for similar coastal timber loading operations.

The loading area showing tramway, skids and the SS Bergalia *offshore circa 1927.*
Photo from The Clyde River and Batemans bay Historical Society records.



The Pebbly Beach sawmill circa 1927. Note, with magnification, the derrick crane and the SS Bergalia *visible through the mill superstructure*

The crane is something of a mystery because it is not evident as to its precise use. Either it was used to assist the unloading of the timber from the tramway onto the skids or it assisted in some unaccountable way with the flying fox or, more likely, it was used initially in the construction of the sawmill for unloading machinery from boats directly alongside the rock platform as well as loading timber directly onto boats. Perhaps its use changed over time. The 1929 edition of the Parish Map shows that the Special Lease for "wharf & crane" had the words "& crane" taken out of the description at some unknown date suggesting it was unused in the latter years.

We do know that the crane was built contemporaneously with the sawmill in 1908 for use in loading milled timber and was reported as capable of "a heavy lift".[4] We speculate that initial loading was either directly by crane alongside the rock platform or via lighter and that the flying fox system was introduced at a later date.

The authors acknowledge the generous assistance of David Sledge (Registered Surveyor) who produced the finely accurate field points map and to Bill Chilvers who assisted with field measurements.

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Light Railways of Australia Facebook Group

In the last issue of *Light Railways* we reported that the *Light Railways of Australia* Facebook Group had been very active. Since then that activity has accelerated, and the number of members has increased from 518 members to 744. You do not have to be a member of the LRRSA to join. The Group is managed by three LRRSA Committee members.

The Group is for people interested in the types of railways described in *Light Railways* magazine, and is intended to provide a meeting point and means of communication for all those interested in its aims.

Amongst the many interesting photographs uploaded over the past two months was this postcard – "Timber tramway in a beautiful setting" – which was produced by the Commonwealth Immigration Office for distribution at the British Empire Exhibition in London in 1924. The location is not known, but the Coffs Harbour area has been suggested as a possibility.

TIMBER TRAMWAY IN A BEAUTIFUL SETTING.
HUGE QUANTITIES OF TIMBER FOR ALL PURPOSES ARE WON FROM BEAUTIFUL MOUNTAINOUS DISTRICTS THROUGHOUT AUSTRALIA. SAW MILLS ARE ERECTED IN THE HEART OF THE BUSH, AND THE CUT TIMBER IS SENT TO THE NEAREST RAILWAY STATION READY FOR THE ROAD.
COMMONWEALTH IMMIGRATION OFFICE PHOTO

You will find the group here:

https://www.facebook.com/groups/LightRailwaysAustralia/

Please send contributions to:
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e-mail: industrial@lrrsa.org.au

Special thanks to contributors to the *Sugar Cane Trains/Navvy Pics 2ft* Facebook page.

QUEENSLAND

BUNDABERG SUGAR LTD, Millaquin Mill

(see LR 257 p.28)
610 mm gauge
A car and cane train of empty bins collided at Douglas Road and Mahoney Dexters Road, Alloway on 22 June. There were no injuries. A car driven by a former MP ran into a loaded cane train hauled by EM Baldwin B-B DH *Calavos* (4983.1 7.73 of 1973) at a level crossing on Burnett Heads Road at Qunaba, east of Bundaberg on 13 July. The car collided with the locomotive, which derailed along with three bins. The car driver and loco driver were both injured and taken to hospital.
News Mail 22/6/2018; *The Courier Mail* 14/7/2018; *Brisbane Times* 13/7/2018; ABC Wide Bay 13/7/2018

ISIS CENTRAL SUGAR MILL CO LTD

(see LR 262 p.33)
610 mm gauge
Isis Mill has made application to Bundaberg Regional Council to construct around 20 kilometres of cane railway from Booyal to Wallaville. Over a number of years, this mill's fleet of six former QR DH class locos have all had their original Caterpillar 6 cylinder motors replaced by Caterpillar V12 motors. The only other loco on daily cane hauling duties is EM Baldwin B-B DH 11 (10130.1 6.82 of 1982). EM Baldwin B-B DH 10 (7267.1 6.77 of 1977) is in service with the navvies and was seen with the ballast train at Huxley on 4 August. A small ballast spreader was attached to the rear headstock. Clyde 0-6-0DH 9 (75-812 of 1975) is stored in the sleeper shed and has reportedly not seen use on cane haulage since around 1999.
Brian Bouchardt 7/18, 8/18; Josef Menich 7/18; 8/18; Bundaberg Regional Council 3/7/18

MACKAY SUGAR LTD, Mackay mills

(see LR 262 p.33)
610 mm gauge
A vehicle ran into a stationary cane train at a level crossing on Nilssons Road, Te Kowai during the evening of 28 June with four occupants being taken to hospital for treatment. A resident on the Mackay-Eungella Road drove a ute out of their driveway and collided with an on coming train of empty bins travelling between Marian and Pleystowe on 16 July. This was the third incident involving motor vehicles and cane trains this season.
Daily Mercury 29/6/2018; Mackay Sugar 7/18

MACKAY SUGAR LTD, Mossman Mill

(see LR 262 p.33)
610 mm gauge
Far Northern Milling Pty Ltd, representing Mossman and Tableland cane growers, has entered into a conditional contract to buy Mossman Mill from Mackay Sugar. Com-Eng 0-6-0DH *Ivy* (AL4181 of 1965) was seen outside the loco shed with its engine bay gutted on 22 July. Its multi-unit partner, Com-Eng 0-6-0DH *Cook* (AL3372 of 1964), was running around on its own. Clyde 0-6-0DH *Habana* (60-215 of 1960) was seen working without its multi-unit calf Clyde 0-6-0DH 11 *Marian* (56-104 of 1956) on 9 August. The *Marian* had come down with drive troubles since the last time the two locos were seen paired up on 22 July.
Daily Mercury 20/7/2018; *Port Douglas & Mossman Gazette* 26/7/2018; Gregorio Bortolussi 7/18, 8/18

MSF SUGAR LTD, Mulgrave Mill

(see LR 262 p.33)
610 mm gauge
Locos seen in use since the crushing started in June have included Com-Eng 0-6-0DH locos 8 *Charringa* (A1926 of 1958), 9 *Meerawa* (FC3473 of 1964), 12 *Riverstone* (AD1452 of 1961), 17 *Deeral* (AD1453 of 1962) and 26 *Meringa* (AK3675 of 1964), Clyde 0-6-0DH locos 18 *Barron* (64-379 of 1964), 19 *Redlynch* (65-435 of 1965) and 25 *Cucania* (63-289 of 1963) and Walkers B-B DH 20 *Mulgrave* (612 of 1969 rebuilt Bundaberg Foundry 1995). 18 and 19 were not seen in multi-unit mode. During July, EM Baldwin 0-6-0DH 11 *Maitland* (4413.2 8.72

Mossman Mill's Clyde 0-6-0DH Habana *(60-215 of 1960) crosses the South Mossman River with a rake of empties on 9 August. Photo: Gregorio Bortolussi*

of 1972) was seen on blocks outside the loco shed, less its wheelsets and final drive, the latter of which had been transferred to 18. By late June, the piers of the Mulgrave River bridge on the main line south had been braced with steel frames.
Anthony McIlwain 6/18; Gregorio Bortolussi 7/18, 8/18; Luke Horniblow 6/18, 7/18; Maikha Ly 7/18; Mick Brown 7/18

MSF SUGAR LTD, South Johnstone Mill
(see LR 262 p.34)
610 mm gauge
A spectacular derailment involving a loaded cane train hauled by Com-Eng 0-6-0DH multi-unit locos 38 (AH4695 of 1965) and 39 (AH4688 of 1965) south of Mourilyan on 22 July saw 38 derailed and bins veering across onto the edge of the adjacent Bruce Highway. It was caused by a defective wheel on one of the bins getting caught up in a set of points as the train travelled over them.
MSF Sugar 7/18; ABC Far North 7/18

WILMAR SUGAR (HERBERT) PTY LTD, Herbert River Mills
(see LR 262 p.34)
610 mm gauge
Victoria Mill's EM Baldwin 4 wheeled brake wagon BV3 (4692.1 4.73 of 1973) had the centre wheelset reinstated during the slack season to become 6 wheeled as it was originally. Victoria Mill's two Clyde brake wagons, 4 wheeled BV6 (CQ3477-2 of 1976) and 6 wheeled BV7 (CQ3477-3 of 1976), are now surplus to requirements with BV6 being the official spare unit. As such, it was seen in use paired up with EM Baldwin B-B DH *Wallaman* (6400.3 4.76 of 1976) during much of July while EM Baldwin 6 wheeled brake wagon BVAN 2 (7065.5 6.77 of 1977) was out of action with a broken axle. Victoria Mill's Clyde 0-6-0DH *Canberra* (65-433 of 1965) was on loan to Macknade Mill from 18 or 19 June and still there on 17 August although it did intermittent stints at Victoria during this period. Victoria Mill's Clyde 0-6-0DH *Lucinda* (65-436 of 1965) was on loan to Macknade Mill from 2 August and was still there on 17 August. The Suzuki Sierra hi-rail vehicle was returned from Invicta Mill by 19 June.
Victoria Mill's Hudswell Clarke 0-6-0 *Homebush* (1067 of 1914) ran passenger trains on the Nyanza line as part of the festivities associated with the annual Italian Festival on 4 August. During the weeks prior, one of the carriages had been completely refurbished and the *Homebush* had received much needed smokebox repairs.
CCTV cameras at a level crossing in the Halifax area caught at least two people trying to catch a lift on the brake wagon of a sugar train during the weekend of 14 and 15 July. A derailment at the Macknade Triangle on 15 July saw full cane bins come to rest within a metre of a vehicle waiting at the level crossing on the 4 Mile Road. The Plasser PBR-201 ballast regulator (243 of 1984) had been returned to Proserpine Mill by 5 July.
Editor 6/18, 7/18, 8/18; Townsville Bulletin 18/7/2018; Peter Phillips 7/18; Tom Badger 7/18

Top: *Walkers B-B DH 4 (656 of 1970 rebuilt Walkers 1994) has just retrieved its Hexham Engineering bogie brake wagon 4 (HE 684 of 1987) from the end of a rake of bins in the Isis Mill full yard on 14 July. Photo: Brian Bouchardt* ***Centre:*** *Farleigh Mill's EM Baldwin B-B DH* Inverness *(10123.1 5.82 of 1982) on the Palmyra branch with twenty-three full 6 tonne bins from Palmyra 6 siding on 29 June. Photo: Steven Jesser* ***Above:*** *Sugar Terminals Ltd Com-Eng 0-6-0DH (G1023 of 1958) shunting at the Lucinda Bulk Sugar Terminal on 29 July. Photo: Luke Horniblow*

Top: Clyde 0-6-0DH 12 (65-434 of 1965) is ready to pull a rake of fulls out of the Dip siding in Hamleigh before heading home to Macknade Mill on 15 July. Photo: Anthony Vardanega Centre: Lined up on the ends of rakes of bins in Invicta Mill's empty yard on 23 July are a quartet of the mill's bogie brake wagons. Photo: Jamali Labelak Above: During July, Proserpine Mill's EM Baldwin B-B DH 9 (6626.1 7.76 of 1976) is seen alongside Blair Road, north of the mill. Photo: Tony Bennett

WILMAR SUGAR PTY LTD,
Inkerman Mill, Home Hill
(see LR 257 p.32)
610 mm gauge
EM Baldwin B-B DH *Bojack* (7280.1 9.77 of 1977) was seen heading in with fulls near the end of the line to Mt.Inkerman on 2 July. In mid July, the *Bojack* was seen at work again along with Com-Eng 0-6-0DH *Keebah* (C2231 of 1958) and EM Baldwin 0-6-0DH *Carstairs* (6/2715.1 9.68of 1968). Com-Eng 0-6-0DH *Koolkuna* (AM4993 of 1965) left the mill on a semi-trailer bound for repairs at the workshop at Pioneer Mill on 18 July.
Editor 7/18; Brian Bouchardt 7/18; Grant Giachin 7/18

WILMAR SUGAR (INVICTA) PTY LTD,
Invicta Mill, Giru
(see LR 262 p.35)
610 mm gauge
Walkers B-B DH *Hodel* (687 of 1972 rebuilt Bundaberg Foundry 7325 of 1995) returned from a slack season refurbishment at Pioneer Mill on 30 June and entered service on 16 July. On 5 August, it rolled over onto its side near the Ayr to Dalbeg Road. Kalamia Mill's EM Baldwin B-B DH *Burdekin* (10215.1 7.82 of 1982) was on loan from the night of 21-22 June to 2 July. The same mill's EM Baldwin B-B DH *Selkirk* (6750.1 8.76 of 1976) was on loan from 2 July to sometime during the week ending 15 July. Walkers B-B DH *Clare* (655 of 1970 rebuilt Tulk Goninan 1995) returned to service on 28 June following its rollover on 17 June. The mill's three Com-Eng 0-6-0DH locos *Haughton* (AH3878 of 1964), *Northcote* (AH4091 of 1965) and *Barratta* (AH4098 of 1965) were all seen in service during July. The Suzuki Sierra hi-rail vehicle had been returned to Victoria Mill by 19 June.
Editor 6/18; Brian Bouchardt 7/18; Jamali Labelak 7/18; Shane Yore 6/18, 7/18; Luke Horniblow 6/18, 7/18; Gregorio Bortolussi 8/18; *Townsville Bulletin* 6/8/2018

WILMAR SUGAR (KALAMIA) PTY LTD,
Kalamia Mill
(see LR 262 p.35)
610 mm gauge
EM Baldwin B-B DH *Burdekin* (10215.1 7.82 of 1982) was on loan to Invicta Mill from the night of 21-22 June to 2 July. EM Baldwin B-B DH *Selkirk* (6750.1 8.76 of 1976) was on loan to the same mill from 2 July to sometime during the week ending 15 July. Seen in use during mid July were Com-Eng 0-6-0DH *Delta* (FD5094 of 1965) as well as EM Baldwin B-B DH locos *Selkirk* (6750.1 8.76 of 1976) and *Norham* (5383.1 7.74 of 1974). The latter was seen crossing the McDesme catchpoints on 23 July. Ex Pioneer Mill Walkers B-B DH 5803 (682 of 1972) has stayed on at this mill to load the Pacific National molasses trains. Com-Eng 0-6-0DH *Kalamia* (A1409 of 1955) has lain out of use at the mill for many years and in mid July, it was noted that the hood had been removed and the engine bay gutted.
Brian Bouchardt 7/18; Luke Horniblow 6/18, 7/18; Shane Yore 6/18, 7/18

WILMAR SUGAR PTY LTD,
Pioneer Mill, Brandon
(see LR 262 p.36)
1067 mm gauge
Seen at work during mid July were Clyde 0-6-0DH locos *Pioneer* (63-287 of 1963) and *Airdale* (64-318 of 1964) as well as Walkers B-B DH *Jardine* (592 of 1968). Walkers B-B DH 5803 (682 of 1972) has remained at Kalamia Mill.
Brian Bouchardt 7/18; Luke Horniblow 7/18

WILMAR SUGAR (PLANE CREEK) PTY LTD,
Plane Creek Mill, Sarina
(see LR 262 p.36)
610 mm gauge
Walkers B-B DH QR4 *Carmila* (676 of 1971 rebuilt Bundaberg Foundry 1996) was seen in service during July following its slack season motor and drive train upgrade. Its name plates now carry the number QR4 as well as the name. This is the official mill number for this loco and the mill's other Walkers B-B DH locos have QR prefixes to their numbers as well but don't carry them. Clyde 0-6-0DH D1 (56-101 of 1956) is no longer in service and is stored at the end of the bin shop line.
Luke Axiak 6/18; Anthony Morris 7/18; Brian Millar 7/18; Tom Badger 7/18

WILMAR SUGAR (PROSERPINE) PTY LTD,
Proserpine Mill
(see LR 262 p.36)
610 mm gauge
Walkers B-B DH 11 (628 of 1969 rebuilt Walkers 1996) was to be released to traffic on 13 July. During July, Clyde 0-6-0DH 8 (65-443 of 1965) was seen working the Kelsey Creek line and EM Baldwin B-B DH 9 (6626.1 of 7.76 of 1976) at Blair Road on the Koolachu line. The Plasser PBR-201 ballast regulator (243 of 1984) had returned from Victoria Mill by 5 July.
Tony Bennett 7/18; Tom Badger 7/18

NEW SOUTH WALES

BLUESCOPE STEEL LTD,
Port Kembla Steelworks
(see LR 261 p.28)
1435 mm gauge
A visit here on 6 July saw the following Pacific National locos working at the Cringila exchange sidings. General Electric Australia Bo-Bo DE D40 (A-241 of 1972) along with National Railway Equipment Bo-Bo DE locos PB6 (209-PB6 of 2014) and PB7 (209-PB7 of 2014). Although not sighted, English Electric Australia Bo-Bo DE D27 (A-040 of 1960) is reportedly still in service. Clyde Bo-Bo DE T379 (64-334 of 1964) was seen stored within the steelworks near Cringila. This loco was transferred from Melbourne in 2014 for internal works shunting but upon arrival was deemed unsuitable and immediately stored.
Brad Peadon 7/18; Bradly Coulter 7/18; John Turner 7/18

GOULBURN RAIL HERITAGE CENTRE,
Goulburn
(see LR 260 p.27)
1435 mm gauge
Seen here on 20 July was Walkers B-B DH 7322 (684 of 1972) which is being overhauled for Compass Rail, the rail division of K & H Ainsworth Engineering Pty Ltd of Goulburn.
Brendan Winkler 7/18; Steve Kite 8/17

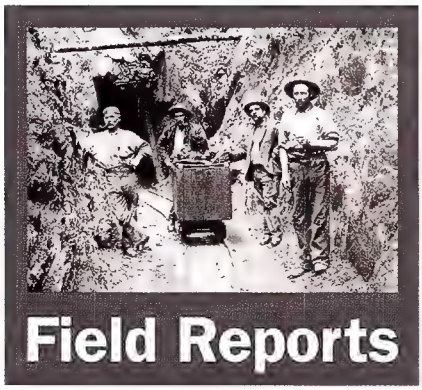
K & H AINSWORTH ENGINEERING PTY LTD, Goulburn
(see LR 260 p.29)
1435 mm gauge
The rail division of this firm is now known as Compass Rail. Its Walkers B-B DH 7322 (684 of 1972) was seen partially overhauled in the shed at the Goulburn Rail Heritage Centre on 20 July and it looked little changed since the last report in mid January.
Brendan Winkler 7/18; Steve Kite 8/17

SOUTH MAITLAND RAILWAYS PTY LTD,
East Greta Junction
(see LR 262 p.36)
1435 mm gauge
Orenstein & Koppel 4wDH 32 (26263 of 1963) was seen moving one of the 10 class steam locos around on 30 July.
Ian Lovi 7/18

OVERSEAS

FIJI SUGAR CORPORATION
(see LR 262 p.36)
610 mm gauge
Following a study by the Indian government, FSC has to decide on an upgrade to its rail network costing tens of millions of dollars.
Lautoka Mill EM Baldwin 0-6-0DH 16 (6/1257.1 7.65 of 1965) was at the loco shed ready for duty on 3 July. The same mill's Clyde 0-6-0DH 12 (65-431 of 1965) was seen with a loaded cane train in the Nadi area late in July.
Labasa Mill cane farmers in the Wainikoro area have stated that they have to wait at least three days for empty cane trucks to arrive in their area from the mill. FSC has stated that it takes a loco with empty trucks at least ten hours to arrive in Wainikoro from the mill and that dedicated rail maintenance crews have been put on to reduce derailments and delays on this line. Empty trucks are prioritised for Wainikoro and Daku because of the distance involved. Also, fifty trucks have been assigned for Lagalaga.
Filix Banuve 7/18; Nick Roskruge 7/18; Fiji Broadcasting Corporation 24/7/2018, 27/7/2018; *The Fiji Times* 1/8/2018

Top: *Proserpine Mill's Walkers B-B DH 12 (673 of 1971 rebuilt Bundaberg Foundry 1998) is remotely controlled by its driver on the step as it shunts at Glen Isla on the night of 27 June. Photo: Steven Jesser*
Above: *Pacific National's National Railway Equipment Bo-Bo DE PB7 (209-PB7 of 2014) at Cringila on the Port Kembla Steelworks system on 6 July. Photo: Bradly Coulter*



Field Reports

Please send any contributions, large or small, to fieldreports@lrrsa.org.au or to P.O. Box 21, Surrey Hills, Vic 3127.

Lloyd Copper Company Firewood Tramway Gauge 914 mm

Early in 2018 I received a phone call from a Silviculture Supervisor based in the Bathurst Office of the NSW Forestry Corporation. He introduced himself and explained that the Corporation had recently purchased several radiata pine plantation compartments in the Burraga district from Hume Forests Limited. The compartments had been logged by the previous owner and Forestry contractors were in the process of preparing the ground for replanting.

Local foresters had drawn his attention to the remnant earthworks, some quite substantial, of the old Lloyd Copper Company's firewood tramway that passed through several of the compartments. The Corporation had decided that as they were part of the district's heritage, it would preserve the earthworks and the tramway corridor. It had marked the formation on its operations maps and issued instructions to its contractors to keep their machinery off it. Plans were afoot to plant a double row of pine seedlings along each side of the old line to form an avenue, and to erect information signs at suitable locations. Further, a media release was being considered to mark the occasion for which some background information was needed. "Did I know anything about the history of the firewood tramway?"

Fortunately, I did know something about the tramway. Quite a lot, in fact. For the past 18 months I had been researching and writing a book on the history of the Burraga Copper Mine and the life of Lewis Lloyd, the 'Copper King,' who had owned it for 20 years. I was able to supply the Forestry Corporation with a thumbnail history of the tramway, an indicative map of the line and a free plug for LRRSA for good measure.

The tramway was built in 1912 by the Lloyd Copper Company who had purchased the Burraga Mine from Lewis Lloyd in 1899 for the then unheard-of sum of £100,000. The line was a 3ft-gauge tramway operated by a pair of 28-ton Shay steam locomotives. It extended 13 kilometres north-west from the mine into forest country to supply firewood for the mine's voracious smelting furnaces and its extensive steam plant. At full production the mine burnt 200 tons of wood a day. Prior to the construction of the tramway, the surrounding countryside had been denuded of timber to such an extent that the mine and smelter had remained closed for the previous four years due to lack of fuel.

The route for the tramway was surveyed by Edwin Eric Booth, the Lloyd Copper Company's mine surveyor. He also oversaw its construction and described it in evidence given to a NSW Public Works Committee:

> The cost of the line as completed was £2,500 per mile, with 28lb rails. The total length of the line is a little over 8 miles; the curves are 2 chains radius and the maximum grade is 1 in 28. Stringy-bark sleepers were brought in from the bush and were round timber laid 2ft apart on curves and 2ft 6in on the straight.
>
> The line was built by amateur labour- that is to say, the labourers were not navvies, and that circumstance added to the cost of the line. They had no previous experience of railway work. We were heavily handicapped because of the [wet winter] weather and the inexperience of the men in permanent-way construction. If we had employed trained navvies we could have built the line for about £1,700 per mile.

An indicative route of the firewood tramway was already known. Construction across Crown Lands and private property was enabled by a Provisional Mineral Lease, PML 4. Although the original survey has not been located, its essence has been preserved on early editions of Burraga parish maps. Overlaying these onto modern 1:25,000 topographic maps gives a reasonable approximation of the route.

Some five kilometres of the central section of the tramway crosses open paddocks, most belonging to Buckburraga Sheep Station. Parts of the formation here can be clearly seen in Google Earth satellite images and in NSW SIX Map aerial photographs. These add credibility to the route shown on parish maps. This helpful technique unfortunately did not work for the scrub-covered and blackberry-infested mine site and also for the pine-forest covered northern section of the line.

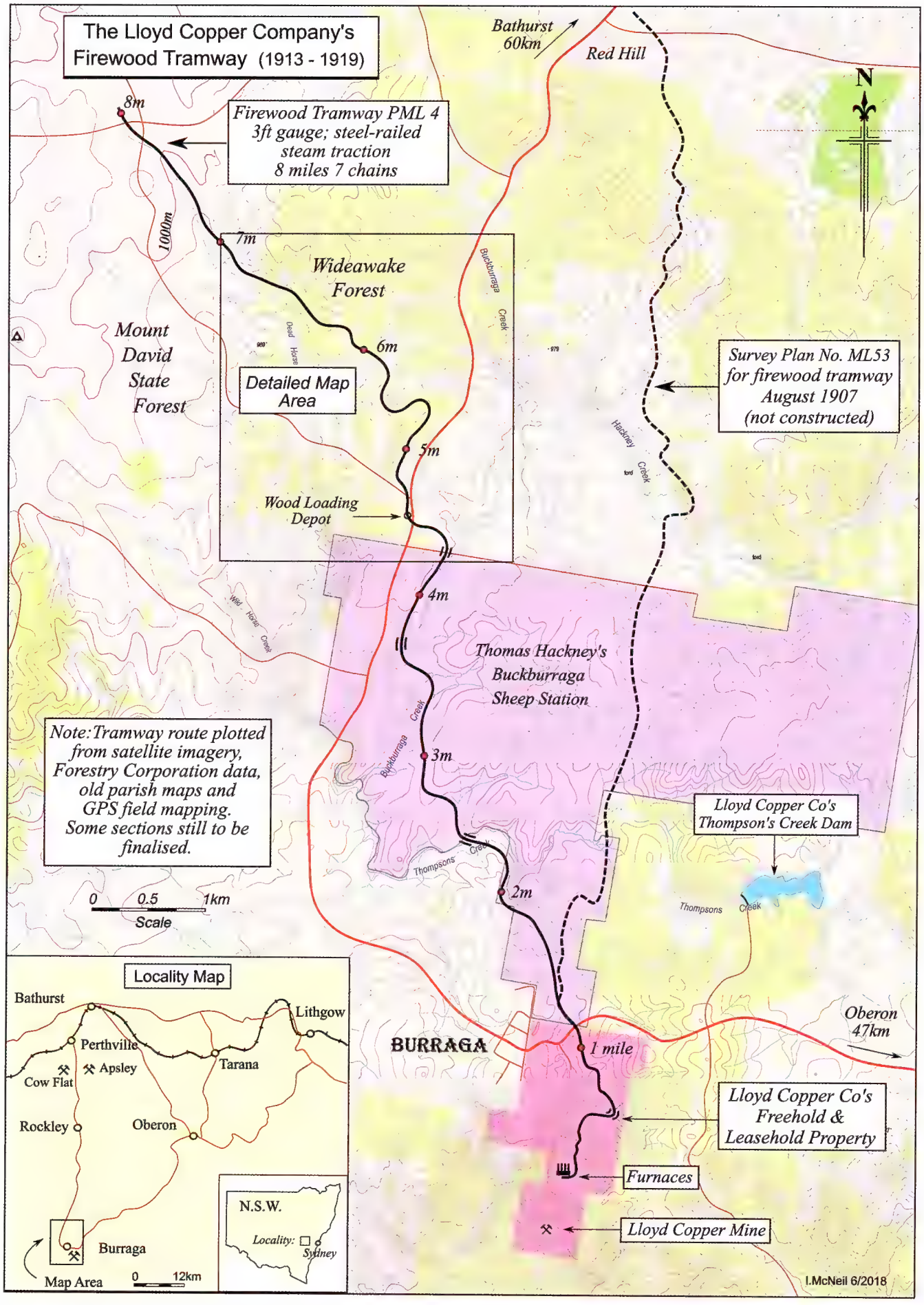
Another guide was supplied by LRRSA member Jim Longworth in the form of a set of hand-drawn sketch maps. The unknown compiler appears to have field-walked the length of the line, possibly as early as the 1950s, and recorded the length, depth and height of the many cuttings and embankments along the way. The level of detail suggests a pace-and-compass technique was used but unfortunately the resulting sketch maps could not be usefully re-scaled to match up with modern topographic maps. Nevertheless, they proved to be an asset; many of the individual features recorded have since been significantly eroded by the passage of time and some have been obliterated altogether by pastoral and forestry activities.

My Forestry Corporation contact said that the Bathurst Office had an extensive suite of LiDAR imagery covering its forest holdings and that tramway earthworks were clearly visible on some of the high-definition images. He provided a detailed map showing where the earthworks had been located. This was too good an opportunity to pass up. A pencilled-in field trip to Burraga "sometime in 2018" was brought forward and firmed up for early May. Phone calls to LRRSA stalwarts Jeff Moonie and Ross Mainwaring resulted in them joining for a field walk over the forestry section of the tramway.

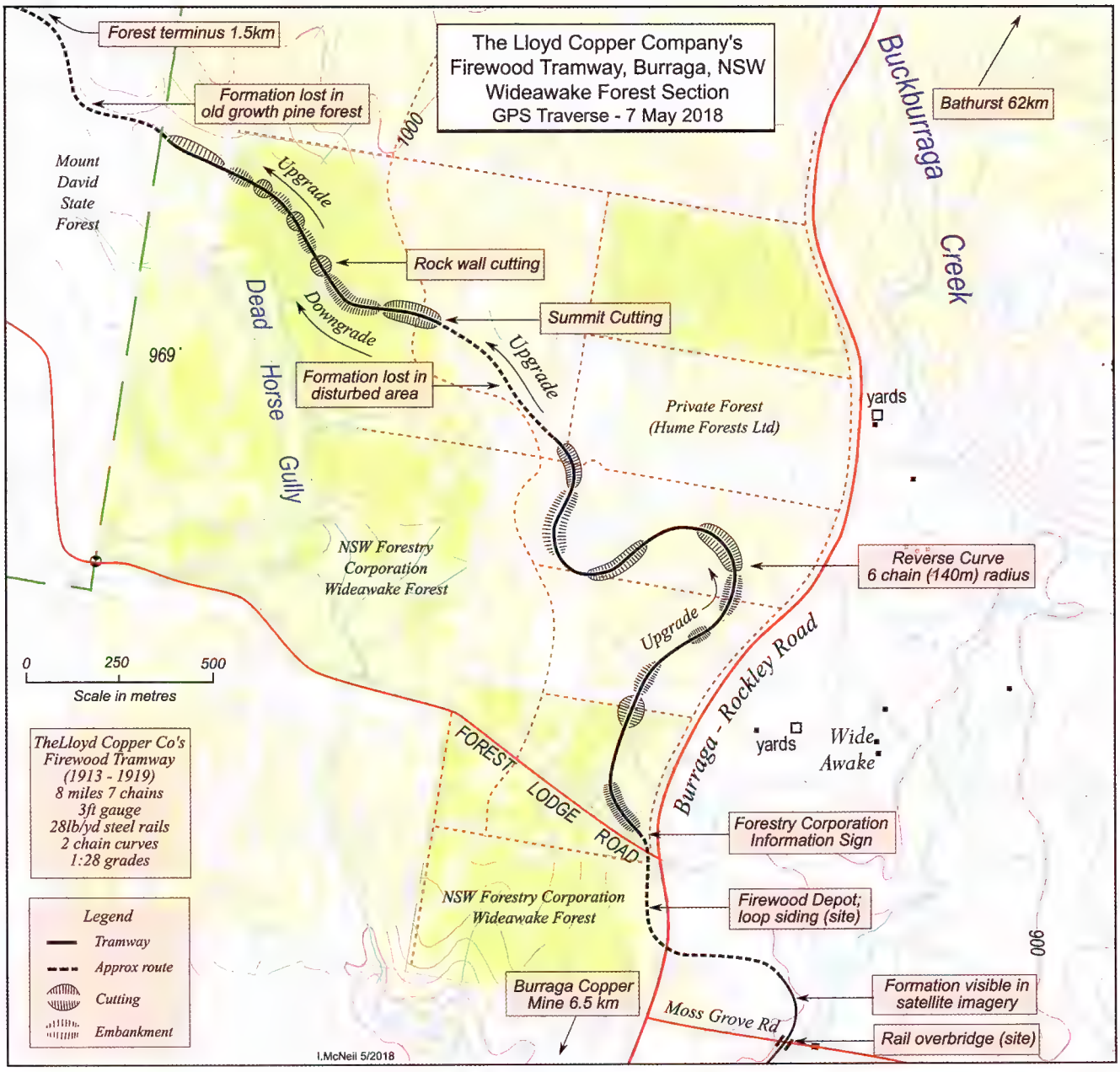
On 7 May we arrived in the tiny village of Burraga high up on the NSW Central Tablelands. We drove a few kilometres north along the main road to Bathurst to its intersection with Forest Lodge Road, one of the principal forest access roads. This was the approximate half-way point of the tramway and also marked the original boundary between the extensive pastoral holdings of Buckburraga Sheep Station and old-growth eucalypt woodlands.

The scene that greeted us was not encouraging. Hume Forests Limited had logged its compartments before selling them to the Forestry Corporation. The whole area had been clear-felled and parts

Ross Mainwaring and Jeff Moonie stand beside the NSW Forestry Corporation's recently-erected information sign at the junction of Forest Lodge Road and the Burraga-Bathurst road. The line of stringy-bark eucalypts lining Forest Lodge Road typifies the original dry sclerophyll forest cover tapped by the firewood tramway to feed the Burraga Copper Mine's smelting furnaces. Photo: Ian McNeil



The Lloyd Copper Company's firewood tramway extended 13km from its copper smelting furnaces near Burraga out into native forests west of the main road to Rockley.



GPS track data from the May 7 2018 field-walk along the Lloyd Copper Company's firewood tramway was plotted on the relevant section of the 1:25,000 8830-3S Burraga topographic base map.

of it looked a bit like the old WW1 battlefields on the Western Front; hardly a tree left standing and devastation as far as the eye could see. However, there was a recently-erected Forestry Corporation information sign advertising the tramway near the road junction and a remnant tramway embankment curving away into the distance. So, armed with a Garmin eTrex Vista GPS, cameras and field notebooks we set off to field walk the old line.

We followed the formation uphill as it climbed out of the Buckburraga Creek watershed, generally following hillside contours. Shallow earth-walled cuttings up to two metres deep alternated with low earth embankments up to three metres high. The embankments were heavily eroded and liberally studded with sawn-off pine stumps. Cuttings were partially filled with soil and erosion debris. Hardly surprising seeing the line had closed nearly 100 years ago, in 1919, and the rails had been lifted three years later. Nearly a century of hard winters and heavy rains had taken its toll, not too mention the raising and felling of crops of pine trees.

It was encouraging to note that the Forestry Corporation had taken measures to protect the formation while preparing to plant the next crop of radiata pine. Fallen debris had been mostly cleared off embankments; burnt logs lifted out of cuttings, and windrows of pine debris destined for burning kept clear of the line. A pair of 600 mm deep, bulldozer-ripped lines paralleled the formation on both sides, destined for pine seedlings which will eventually form a double avenue of pine trees bordering the old right-of-way. About 500 m from our starting point the line described a large 6-chain (140 metre) radius S-shaped reverse curve to gain altitude. It was lost north-west of the reverse curve in heavily-disturbed ground in a compartment still owned by Hume Forests. Fortunately, it was soon picked up again in a shallow summit cutting that breasted the low ridge that divides the watershed of Buckburraga Creek from that of Dead Horse Gully.

From the summit cutting the tramway went downhill on a fairly steep grade and for nearly a kilometre passed through the most scenic section of the line, earthworks-wise. A closely-spaced progression of short cuttings and 3 m high embankments took the line across several dry drainage depressions. The most substantial cutting had vertical rocks walls – the only one of its type on the line – which may have been as deep as 4 m when constructed. Few of the embankments appeared to have any provision made for culverts, possibly a reflection of their construction by untrained labourers and quite probably contributing to an early observation that "they settled like wet cement during the first winter." Another early criticism stated that many of the curved cuttings were narrow and inadequately drained, factors which contributed to derailments when the unballasted line sank into underlying clay in wet winter weather.

The traceable limit of the formation finished at the boundary between the logged ex-Hume

A short, 3-metre deep rock-walled cutting with a 2-metre high approach embankment (digitally enhanced) curving off to the left behind it. Clear-felling of the 30-year old pine plantation has left an unsightly lunar-like landscape, but in years to come the old formation will be preserved and enhanced as an avenue bordered by stately pine trees. *Photo: Jeff Moonie*

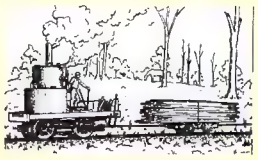
The tramway crossed this 2m high embankment (digitally enhanced) over a shallow drainage depression and entered a small cutting, seen in the distance, before entering the Mount David State Forest pine plantations. It extended a further 1.5km to the forest terminus but deep contour ploughing during pine planting had obliterated the light earthworks in this section. *Photo: Jeff Moonie*

Forests compartments and the old-growth Mount David State Forest. This is currently a mature pine forest. The forest floor was thickly carpeted with dead pine needles and generously scattered with fallen trees, both of which made for difficult going. It appeared that before planting some 30 years ago, the ground had been thoroughly contour-ploughed to create multiple parallel ridge and furrow grooves. The pine trees had been planted on parallel ridges which looked like tramway embankments. Many of the grooves looked just like shallow cuttings.

The tramway formerly extended another 1.5 km northwest through the pine forest though a follow-up visit three days later failed to find any trace of it. Ironically, this was not the first time we three had been in this area. Thirty years ago, in November 1988, Ross Mainwaring had conducted an LRRSA field trip to Burraga which included walking over this section of the line. Our visit pre-dated the State Forest plantings in this area and my subsequent trip report read in part, "Finally the line petered out in a broad grassy valley, which was probably thickly wooded before the tramway and the firewood cutters arrived."

In all it was a worthwhile excursion. It enabled the accurate mapping of a significant section of the Lloyd Copper Company's firewood tramway and we came away with the knowledge that part of the formation was to be sympathetically preserved by the NSW Forestry Corporation.

Another day was spent investigating the old Burraga Copper Mine site and a field report on those findings will appear in a future issue of *Light Railways*. Ian McNeil



LRRSA NEWS

MEETINGS

ADELAIDE: "Still more of The Beechy and LRRSA hard disc"

We will discuss the Beechy in Victoria in 1959 again for another view – including what should have been shown at the last meeting. Also, we will have more discussion of our LRRSA hard disc. News of light rail matters will be welcome from any member. Intending participants would be well advised to contact Les Howard on 8278 3082 or by email lfhoward@tpg.com.au, since accommodation is limited.

Location:
1 Kindergarten Drive, Hawthorndene.
Date: Thursday 11 October 2018 at 7.30pm

BRISBANE: "Indonesian, Poland and Indian steam"

Ross Sadler will be presenting three different videos showing the highlights of Gondang Baru and Kebon Agung (Indonesia) in 1994, the last days of the Sroda to Zaniemyšl narrow gauge (Poland) and then two days in Darjeeling in 1996.

Location: BCC Library, 107 Orange Grove Road, Coopers Plains.
Date: Friday 19 October 2018 at 7:30pm

MELBOURNE: "East German steam"

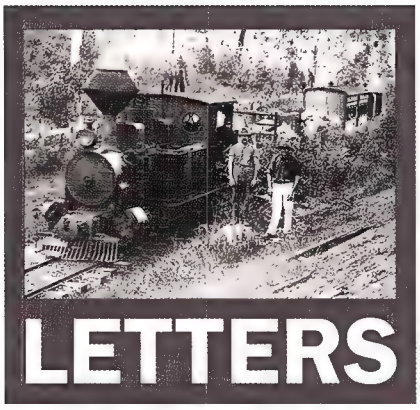
We will be presenting a feature showing Meyers, Mallets and other marvels from the DDR between 1967 and 1970. The locomotives are mainly 750mm-gauge plus some metre gauge on the little-known systems of Prignitz, Franzburger, Kreisbahnen, and Spreewaldbahn in East Germany.

Location: Ashburton Uniting Church Hall, Ashburn Grove, Ashburton.
Date: Thursday 11 October 2018 at 8pm.

SYDNEY: "Industrial railways of South America"

The industrial and mainline railways of South America were many and varied. Track gauge differed from system to system to suite the terrain, which was dominated by the Andes mountain range. Locomotives, steam, diesel and electric were manufactured in the UK and USA to run on these lines. Probably the most notable were the Kitson-Meyer rack-adhesion steam loco's built in the early 1900s to climb the 1-12½ grades of the Transandine Railway of Argentina. Photographers Steve Preston and Chris Arnold, who have toured many South American countries, will present their excellent photos of the railways.

Location: Woodstock Community Centre, Church Street, Burwood. Free Council car park behind building (entry via Fitzroy Street) or close-by street parking. Only 10 minutes easy walk from Burwood railway station.
Date: Wednesday 10 October 2018 at 7:30pm.



Book Review – *Sleeper cutting in Australia* (LR 261)

I was very pleased to learn that a review of my book by Ian Bevege was published in your magazine. I felt that the reviewer was very kind to me as I read the review.

As a life member of the Eden Killer Whale Museum I decided to enter into a publishing agreement with that institution, as it had been instrumental in keeping historical booklets available for many years. Please be aware that if you wish to purchase a number of the books they would be made available at $10 a copy (plus postage of course) – contact me via the Editor.

Is the LRRSA aware that when our Green Cape lighthouse was built in 1883 a timber railway was built along the coast from Bittangabee Bay to the site for the express purpose of getting materials onsite (the tower is solid concrete). To my knowledge nothing of the rail line or trestle bridges remains today, just the shell of a storage shed at Bittangabee.

Robert Whiter
via email

Munitions factory light railways at Villawood and St Mary's (LR 261 and 262)

I note there is a mention of one of the Dorrigo Steam railway locomotives, Little Clyde diesel from the former Munitions factory at St Mary's in the letters section of LR 262. By good luck, that small article and letter to the Editor provided our Museum with a small piece of information about the Little Clyde locomotive that has always eluded us, being what the 2 cab side plates "said". Both plates were missing, when we purchased the locomotive. Now we know it was "Number 1" and that the 2 plates reflected that.

It would be appreciated if a photograph of the plates could be made available, we might be able to make replica plates from those photos to improve the completeness of the locomotive.

Congratulations on all of the work that everyone does in capturing the history of our numerous light railways, we applaud your efforts.

Keith Jones
Manager of Dorrigo Steam Railway and Museum Limited
via email

2017 JLN Southern Award – Judges Report

Each year the LRRSA Council recognizes the efforts of researchers, writers and contributors for the publication of high quality articles on light railway subjects. The J L N Southern Award is made annually for the best article covering research of light railways for the previous calendar year.

The Judging Panel this year comprised Roderick Smith (former President and Treasurer of the LRRSA), Ruth Kerr (an eminent historian based in Queensland) and David Whiteford (an eminent rail historian based in Perth).

The judges noted once again that the task was perhaps more difficult than was the task for the authors. The judges are guided by council's list of criteria and to be eligible, an article must have a minimum of 1500 words. We must then consider each for:

- Research substantially original, making a significant contribution to the body of knowledge of light or industrial railways.
- Material well presented and appropriately referenced.
- Work is of a high standard and readability and interest to the audience.
- An examination, if relevant, of the broader context of where, when and why the railway operated.
- The use of maps, diagrams, photographs and other illustrative material.

All eligible articles did well on all criteria. As ever, the judges were impressed by the diversity, scope and depth and all articles are in some sense a winner: they have been prepared with care, and selected by the editor. This is good for the magazine, good for our members, and good for wider Australian history.

It is pleasing to see Frank Stamford recognised in this year's Queen's Birthday awards for his contribution to light-railway research, also a recognition of our status as a society, and the role which light railways played in the development of the nation.

Production standards and cartography in the magazine continue to enhance the research presented.

After much consideration, the Judging Panel made the following recommendation to Council, which has subsequently been approved:

Your three JLN Southern judges are united in nominating the 2017 winner as author Jim Stokes for the article the 'Later years of the Marrawah Tramway' (published in two parts). This was broad in its scope, covered all aspects which LRRSA espouses, and has become the definitive work on the region. The work was based on an extensive amount of original research, was very well written and easy to read, made use of a large number of original photographs from various resources, and took the reader into the local area to understand the context of the railway and its operational intricacies.

The LRRSA Council would like all members of the Society and magazine readers to join it in congratulating Jim Stokes for his achievement.

Frank Stamford OAM (LR 262)

I was very pleased to read in the latest issue of *Light Railways* of the award to Frank Stamford of the Medal of the Order of Australia, and my congratulations to him on this event.

I have met Frank occasionally in the past and always found him a nice bloke, and someone with a great knowledge of railway history. Such an award does show that we can be considered as people who make some useful input into Australian history, and not just a mob of "nuts" running around chasing little railway engines and trekking through the bush. Once again, 'Good on yer, Frank'!

Bill Pearce
Melbourne
via email

Clyde locomotive at St Mary's munitions works - date unknown. *Photo: John Dunlop collection*

Heritage & Tourist NEWS

News items should be sent to heritagetourist@lrrsa.org.au Digital photographs for possible inclusion should be sent direct to Richard Warwick at editor@lrrsa.org.au including the name of the location, the name of the photographer and the date of the photograph.

NEW SOUTH WALES

PARKES & DISTRICT HISTORICAL SOCIETY, Parkes

610mm gauge

In Jim Longworth's ground-breaking book *Amusement Railways of Australia* (Transit Australia Publishing, 2016) there is a listing for 'Parkes – Government Railway Employees' Picnic'. This gives details of a miniature locomotive of 4-4-0 steam outline built by employees of the NSWGR Parkes loco workshops, bearing the name *Spirit of Parkes* and numbered '1966', after the year of its building. The date of the source information is 1967; no later details being known.

However, a recent search through the *Parkes Champion-Post* newspaper revealed that the loco is still in existence and used at least annually since being restored in 2014 by the historical society (its present owners) after three decades of disuse.

In April I was passing through Parkes and stopped at the Henry Parkes Centre where the historical society has its large and interesting museum. Enquiry revealed that the loco was out the back with the other machinery and sitting on its own 100 metre-long circular 2ft-gauge track. Museum volunteer Jim Hutton kindly uncovered the locomotive and confirmed it is still powered by the 1948 Austin A40 motor car engine fitted originally in 1966.

The track is laid on a gently sloping site and the loco usually hauls only one of the two, rather heavy, carriages available. The rails came from the Glen Davis shale operations and one suspects the same source for the locomotive's front bogie – they have all the hallmarks of a mine skip's wheels. The locomotive's driving wheels (no longer with coupling rods as depicted in Jim Longworth's book) did come from a fettler's trolley.

The locomotive was re-painted in 2016 for its fiftieth anniversary by volunteer Jim who, coincidentally, had also painted the loco when it was built in 1966. It is used in conjunction with various events ("Smoke, Rust & Noise Day") though the current onerous NSW regulations regarding railways of 600mm-gauge and above rather restrict its use as temporary fencing has to be erected despite the train's very low speed. [For a photo of the train in operation see www.parkeschampionpost.com.au/story/3536261/gallery-visitor-50000-at-henry-parkes-centre/#slide=13]

Phil Rickard, May 2018

ZIG-ZAG RAILWAY, Clarence

1067 mm gauge

The formation of the railway sustained flood damage near the Western Portal of Clarence tunnel in 2012. The design works for the rectification of the land slip have been somewhat challenging; problems including land ownership, the management of the required design standards and the insurance process and the suitability of the end product for Zig Zag's needs. However, works have now started

Museum volunteer Jim Hutton with the locomotive 1966 at Parkes in May 2018. Photo: Phil Rickard

on the rectification. The land slip has been the most pressing issue to get trains all the way through to Clarence. When the rectification works are complete it will allow workers access for works trains to complete the rest of the track maintenance from Mt Sinai to Clarence.

At Top Points, contractors have been engaged to perform a slope stability assessment of the washaway under Two Road platform. Site work for this assessment was completed by 15 February and the railway has received the final report and recommendations. They are still digesting the detail of this report and will finalise the rectification plans in the coming weeks.

The railway's final bushfire damage claim is still being reviewed by Comcover and is at the highest level it needs to go; the railway should receive communication in the near future.

Some of the railway's most precious assets have been inspected by civil engineers and found to be in generally good condition with no significant changes since their last inspection. There have been some repairs recommended that are consistent with the recommendations in the 2009 and 2011 inspection reports.

The Bottom Points workshop is still suffering from damage sustained in the 2013 bushfire. In 2016, the workshop was inspected by the structural engineer who designed it and found it safe for workers to use (except for the old machine shop which is still caged off). However, repairs are needed to keep the weather out. As the workshop is located on land that is heritage listed (not the building itself, just the site), a formal development application (DA) is needed to be lodged to undertake repairs to the roofing and retaining wall against Bottom Road.

Carriages 1425 and 1428 are currently in the workshop undergoing preparation for service. This includes woodwork, painting, examination of the brakes and other mechanical components.

Locomotive 1004 has undergone a considerable transformation over the last few months. Most importantly was a thorough servicing of all major systems including the final drives, cooling system, engine lubrication, brakes, etc. This was long overdue given some of the muck that was removed. Combined with the new injector components, it is now a pleasure to drive and starts first turn. The transmission is last on the list but should be ticked off in the next week or two.

Work towards the reopening is progressing systematically.

ZigZagNews Edition 2-18 April 2018

PETE'S HOBBY RAILWAY, Junee

610 mm gauge

Pete's Hobby Railway is a small 2-ft (610mm) gauge railway owned and operated as a hobby by Peter Neve on private property at Junee. The Railway was "officially" opened on Monday 6 February 2017. It is currently under construction, now that approval of the whole concept by the local Council was given last year.

Unfortunately, owing to the specific requirements of the Rail Safety National Law 2012 (NSW), the Railway is not permitted to open for public inspection and/or rides. However, visitors are welcome to view and photograph the Railway from the street but only at times that may be advertised (such as during Junee's Rhythm 'n' Rail Festival, which is usually held in March each year). At other times, it is more than likely that the locomotives and rolling stock will not be easily visible, although the rail track and Loftus station can be clearly seen and photographed.

Adapted from Pete's Hobby Railway website constructed by Peter Neve OAM Junee, NSW Australia. The website can be found at www.peteshobbyrailway.club

John Fowler 0-6-0T 11885 of 1909 undergoes a steam test at Alexandra on 11 August following the successful completion of its annual boiler inspection. Photo: Peter Evans

VICTORIA

ALEXANDRA TIMBER TRAMWAY AND MUSEUM

After the running day on Sunday 9 June the boiler of the John Fowler steam locomotive was blown empty and, on the following day, all washout plugs and the manhole door were taken off. On Saturday 7 July, disassembly for inspection was completed and, on the Sunday, the boiler was thoroughly washed-out with a high-pressure hot-water cleaner, ready for inspection on Saturday 14 July.

Both the internal and in steam inspections were carried out on the same day this year. The inspection revealed that the boiler condition has not deteriorated over the past twelve months thanks to the good work practices of all volunteers using the locomotive. Boiler water treatment and regular blowdowns have kept the inside of the boiler in the best possible conditions. This, along with external cleaning, will ensure a long life for all components. The boiler inspection was completed by ALS, and we are most grateful for their time and expertise. A big effort was also put in by our own and Puffing Billy volunteers over several weekends to make it happen, and the locomotive is now ready a month early for the August steam running day.

Timberline 162 August 2018

Via Peter Evans

PUFFING BILLY RAILWAY, Belgrave

762 mm gauge

The reproduction of the Cockatoo historic railway station buildings to how they were in the 1920s continues to make progress. The original impetus to rebuild the station commenced in June 2014 when a Puffing Billy Volunteer for over 40 years and involved in a variety of senior committee roles, conducted a presentation for the Cockatoo Township Committee on the possible future of the station. As a result, a group of locals set up the "Cockatoo Puffing Billy Appreciation Group" and placed a page on Facebook, now with 905 followers, to promote Puffing Billy's future association with the town. Monthly meetings were held with a plan formulated to rebuild the station as it stood in the 1920s and in addition, to internally house Cockatoo and PB history, relying solely on donated money, materials and labour.

Due to the overwhelming local interest and support shown for the project, Puffing Billy then allocated the funding for the materials required. It is intended to rebuild the station as it stood in the 1920s, making only minimal changes to the original design.

Puffing Billy's Signals and Telegraph staff recently completed signaling works at the site with the installation of traditional platform signal levers into their original position and the site was pegged out in line with a survey of the station in 1924 as a guide for the new plans.

The platform has also now been totally reconstructed and raised in height and is a massive 110 metres long with new timber coping installed along the platform edge to improve safety and make it easier to get on and off the train. The drilling of the backing plates for the platform supports was undertaken by a local volunteer. Construction of the buildings is hoped to commence before the end of the year. They will be about 30 metres long with the verandah about 50 metres long. The buildings will be an impetus for local tourism and will have half the internal area available devoted to Cockatoo history.

It is believed that on completion Cockatoo will be the only station in Australia built by local residents. For those wishing to see what the station will look like, there is a marvelous photograph of Cockatoo Railway Station in 1917 in the website of the Facebook group, Old Railway Stations Across Australia. Eventually the station should look like this. Meanwhile, train numbers 13 and 38 continue to stop at Cockatoo station each day although it is rare that a passenger entrains or alights.

Facebook page of the Cockatoo Puffing Billy Appreciation Group

Former West Melbourne Gasworks 0-4-0T JOHN BENN *(Couillet 861 of 1886). rebuilt as a 2-4-2ST and renamed* JC REES, *at work on a Footplate Experience Train at Lakeside on Sunday 19 August 2018.*
Photo: Mike McCarthy

WALHALLA GOLDFIELDS RAILWAY, Walhalla

762 mm gauge

The broad gauge Fairmont trolley retrieved from Wahgunyah has now been fully restored as a four rows of three transverse seats passenger trolley to be used between two of the motor trolleys. The trolley will initially be used as a works trolley to enable sufficient crew to attend worksites along the track.

The trolley was reported to be a huge success with the recent Ned Kelly filming where the Walhalla track and bridges were used as a substitute for the broad gauge track at Glenrowan. When it was pointed out to the film crew that the gauge at Walhalla was less than half that of the broad gauge, they responded by saying that only a railfan would notice and that they would do the filming to avoid the difference being noticeable. The director of the film claims to be showing the true history of the Kelly Gang but students of history will know that that is clearly impossible as no-one really knows the truth of the matter. When the film is shown, watch out for any gauge anachronisms.

Work on converting the DH locomotives to narrow gauge continues. On completion of the sand blasting of the bogies, they were delivered to contractors for modification. The first of four wheelsets was stripped of its axle-boxes and gear-case in readiness for wheel removal and axle modification in Yallourn. It was stripped of its wheels with great difficulty, requiring two bottles of acetylene and 140 tonnes of force. The design group is progressing with axle and wheel design drawings for the conversion. Contractors will be requested to provide quotations for the stripping of the remaining wheelsets for conversion to narrow gauge. Some minor on-site works will also need to be carried out on the loco underframe to create clearance during turns and for the fitting of the standard narrow gauge three-quarter sized coupling equipment.

On the X1 Tram/Rail Motors, the second pair of the four tram bogies (trucks in tram parlance) has now been stripped and was delivered to contractors for modification. The remaining three, three wheel sets for stripping, were loaded and delivered on the crane truck to the contractors. Other work carried out includes the removal of four brake discs from the tram electric drive motors, collection of the two diesel motors for the rail motor from Yallourn for storage at Thomson, the collection of the first pair of modified bogies for storage at Erica Depot, the beginning of discussions by the project manager with commercial painters with a view to the internal stripping of paint back to the original "Shellac" finished Australian Hardwood finish, a review of the removal and replacement of the painted canvas roof, the retrieval of the tram seats from Adelaide which are now secured in a container at Thomson, and a meeting with the design group to discuss the proposed hydraulic drive system for the rail motor.

Other news includes that PBR has advised that the wheel rims for the railmotors are available for immediate pick-up, but the wheel hub delivery is still to be confirmed awaiting Finite Element Analysis analysis of the final assembly; the new carriage shed extension is now complete and ready for vehicle storage; WGR has applied to TSV for a variation to the present accreditation status as a Rolling Stock Operator and Maintainer to include Design, Construct and Commission Rolling-Stock. WGR management has supplied them with the requested pages of information in support of the application and are awaiting a decision. Endeavours to introduce "In-house" assessment of train crew staff have come to fruition and assessors have been appointed.

Report by Graham Vallance Engineering Manager in the August edition of *Dogspikes and Diesel*

TASMANIA

TASMANIAN TRANSPORT MUSEUM, Glenorchy

610 and 1067 mm gauges

The second oldest item in the museum is probably the former New Town station building that was originally built by the Tasmanian Main Line Railway Company and was listed on timetables as a stopping place by December 1875. Initially named Risdon Road the station was located at the corner of Bay Road and Bellevue Parade and served the growing suburb of New Town, where housing was being built on farmland. It also served the neighbouring horse racing track known as Risdon Park. The station was renamed New Town in 1895. This was the only station located between Hobart and Glenorchy at the time and it consisted of a single building thought to comprise three sections — an office, foyer and ladies' waiting room. The building featured a gable roof with no eaves, weatherboard cladding and multi-pane windows, and was similar in style to some other suburban stations. In October 1890 the TMLR was taken over by the Tasmanian Government Railways, which continued to improve the Hobart suburban services by building more stations and increasing the number of train services.

Tasmanian Transport Museum Newsletter July/August 2018

SOUTH AUSTRALIA

PICHI RICHI RAILWAY, Quorn

1067 mm gauge

The Pichi Richi Railway (PRR) has acquired another industrial locomotive, being Andrew Barclay 1546 of 1919; 0-6-0T. After originally going to a Port Pirie school following its retirement, and then to the PRR, it was then swapped to the Port Augusta Council in exchange for the original *Ghan* locomotive NM25. It has now been donated back to the PRR.

The Port Augusta smelters locomotive, *Passchendaele*, after 50 years in a park at Port Pirie has been acquired by the PRR. The *Passchendaele* locomotive sat in Homestead Park for over 30 years and is finally being moved. A Port Augusta City Council owned asset, the locomotive will be donated to the Pichi Richi Preservation Society which has plans to restore it. "It would be looked on as a long term project for the next generation of railway enthusiasts," PRR Track Superintendent Hayden Hart explained. "It is important to keep things and get them back into the form that they operated in because it is very hard explaining things to young people when they are in a static museum."

Passchendaele originates from Scotland where it was built for the British War Department. It was one of four shunting engines named after significant World War I battles on the Western Front involving the Australian Infantry. The Broken Hill Associated Smelters acquired *Passchendaele*, along with three others, as surplus items after the war. It was in operational use at the Port Pirie smelter and upon retirement, was placed at the Port Pirie Primary School as playground equipment. In the 1980s the locomotive was transferred to Homestead Park when it was deemed no longer suitable as play equipment.

Mr. Hart said. "Even though both NM25 and *Passchendaele* never operated in the Pichi Richi Pass, they are very much part of our Upper Spencer Gulf industrial development".

The Transcontinental on-line news 24 April 2018 - 10:57 AM https://www.transcontinental.com.au/story/5360770/full-steam-donation-for-restoration/

Report received from the SA branch of the LRRSA 15/8/2018

WESTERN AUSTRALIA

BENNETT BROOK RAILWAY, Whiteman Park

610 mm gauge

Betty Thompson is now running on weekends, with some minor ongoing maintenance and inspections from the 10-year overhaul just completed. The Atlantic Planet No. 7 is the main diesel support, mostly due to its more suitable wet weather accommodation. The Dorman Planet No. 8 is currently the third choice of large locomotive, mostly due to two of its brake shoes needing replacement.

Work has been slow on Ng15 123 as most work was concentrated on equipment needed for Ashley Day. A lot of mechanical work on carriages was also urgently needed and overdue. This coupled with the reassembly of *Betty Thompson* took most of the effort.

TM 715, the Ballast Regulator, has been moved into the locomotive shed to enable some overdue work including replacing some hydraulic hoses, fitting a new spark arrestor/muffler, replacement of the damaged air tank, cleaning and repainting, re-wiring the dash and fitting of new work lighting. This is to help with the track maintenance and as a trial run with the paperwork needed for the Tamper. Work is continuing on the re-wiring work on the *Ashley*. So far, the fuel gauge has been reconnected and work has started on the speedometer. A fuse block will be fitted to aid in fault finding.

The Bennettbrooklet June/July 2018

OVERSEAS

KILLAMARSH, UK

Hunslet 4-6-0T locomotive 1215

At 12.15pm on Sunday 8th July 2018, and after a six year battle against all manner of problems (many of them detailed in this section of the magazine), 1215 finally moved off under her own steam to take her first privileged passengers for a ride. The restoration team kept a very careful log of all the workshop hours spent on the restoration of 1215 (now 303) by the team and it added up to a remarkable 20,710 voluntary man hours which has been spread over 426 working days.

The locomotive was publicly launched at the Apedale Valley Light Railway on 13, 14 and 15 July where she was the star attraction at the Tracks to the Trenches three day event and where she was coupled to a WW1 ambulance car for the first time since 1918.

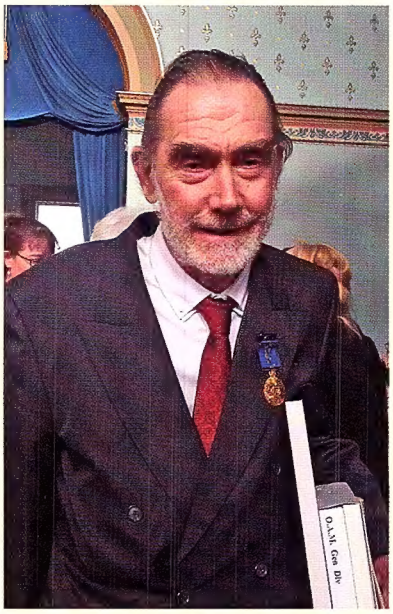
Killamarsh Chronicle Issue No 45A August 2018

The Queens Birthday Honours list saw LRRSA founder and long-time Puffing Billy Preservation Society member and contributor, Frank Stamford, recognised with the award of an Order of Australia Medal, in the General Division, for his "service to rail transport history".

It was in light railway research and publishing that Frank has made perhaps his greatest contribution. He founded the Light Railway Research Society of Australia (LRRSA) in 1961. It has flourished to become a very active organisation with close to 700 members publishing *Light Railways* and, as we well know, many books. Amongst them were *Powelltown, Arsenic and Molasses* and *The McIvor Timber and Firewood Co.*, all researched and written by Frank. It is especially notable that the latter was given a "Highly Commended Award" as part of the Victorian Community History Awards administered by Royal Historical Society of Victoria in 2015. Numerous articles, written by Frank, have also appeared in *Light Railways*.

Frank has been and remains a leader of the LRRSA having produced most of the books that the Society has published. His quiet and unassuming style belies the leadership and contribution that he has brought to the LRRSA and its pursuit of high quality light railway history.

Frank has also been a stalwart at Puffing Billy over many years having been actively involved with the Climax Operating Committee, especially with fund raising and management of the locomotive. He was heavily involved in the setting up of the Footplate Experience Train program as a funding initiative.



Frank Stamford at Government House on 5 September, following the presentation of his OAM. *Photo: Sue Poynton*

Until his retirement in 2016 Frank served as secretary to the Great Train Race committee for more than 30 years contributing also as a race marshal. Following his retirement, he was given the honour of signalling the start of the race in 2016.

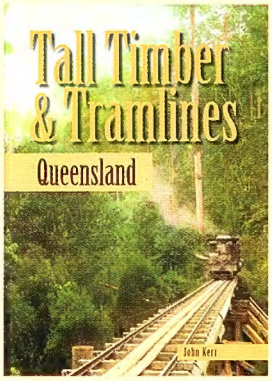
The restoration of the TACL tractor, formerly used for the transport of timber along the Tyers Valley Tramway, near Erica and now resident at the Menzies Creek museum, was another of Frank's achievements. He led the small team that undertook the initial restoration of this very rare example of narrow gauge bush tramway machinery to operating condition.

Well done and congratulations, Frank!

Mike McCarthy

Books from LRRSA Sales ...

Tall Timber & Tramlines Queensland



By John Kerr

Published by the LRRSA.

Describes all Queensland timber tramways known to the author.

Soft cover, 104 pages, A4 size

90 photographs, 28 maps and diagrams,

References, bibliography, and index.

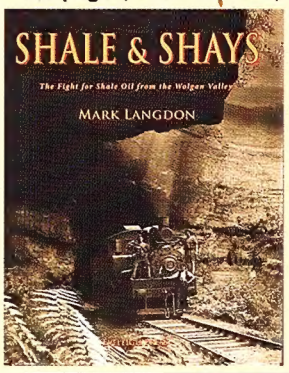
Price $29.95 plus postage
($22.46 to LRRSA members)
Weight: 520 gm

Shale & Shays

The Fight for Shale Oil from the Wolgan Valley

By Mark Langdon

Published by Eveleigh Press.
300 pages, 279 x 215 mm, hard cover, many photographs.

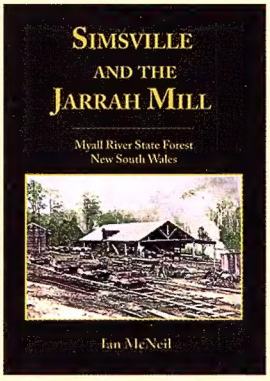


A new history of the famous standard-gauge Wolgan Valley Railway, NSW. With five chain curves and 1 in 25 grades in spectacular scenery, it used four three-truck Shay locomotives. Includes some original hand-coloured photographs, detailed maps, and rolling stock diagrams.

Price $78.00 plus postage
($70.20 to LRRSA members)
Weight 1,400 g

Simsville and the Jarrah Mill

Myall River State Forest, New South Wales

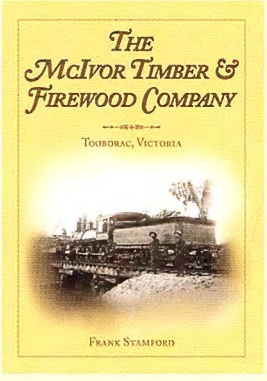


By Ian McNeil
Published by the LRRSA
Soft cover, 96 pages, A4 size
55 photographs, 12 maps and diagrams, references, and index.

The history of a 3ft 6in gauge tramway and sawmilling operations at the village of Simsville, near Stroud. The tramway used three Climax geared locomotives.

Price $29.00 plus postage
($21.75 to LRRSA members)
Weight: 490 g

The McIvor Timber & Firewood Company



Tooborac, Victoria

By Frank Stamford
Published by the LRRSA
Soft cover, 104 pages, A4 size
104 photographs, 23 maps and diagrams, references, and index.

The history of a 5ft 3in gauge tramway from Tooborac to Mitchell's Creek, Puckapunyal, Moormbool West and Cherrington.

Price $30.00 plus postage
($22.50 to LRRSA members)
Weight: 550 g

Postage and packing: Within Australia, up to 250gm $3.50; 251 to 500gm $6.60, 501 gm to 3 kg $15.00, over 3 kg to 5 kg $18.70
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www.lrrsa.org.au

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